

Dell OpenManage
Server Administrator
Version 7.0

CIM Reference Guide



Notes and Cautions



NOTE: A NOTE indicates important information that helps you make better use of your computer.



CAUTION: A CAUTION indicates potential damage to hardware or loss of data instructions are not followed.

Information in this publication is subject to change without notice.

© 2012 Dell Inc. All rights reserved.

Reproduction of these materials in any manner whatsoever without the written permission of Dell Inc. is strictly forbidden.

Trademarks used in this text: Dell™, the DELL logo, and OpenManage™ are trademarks of Dell Inc. Microsoft® and Windows Server® are either trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries. Intel®, Pentium®, Xeon®, Itanium®, i860®, i960®, and Celeron® are registered trademarks and MMX™, i386™, i486™, SpeedStep™, and Core™ are trademarks of Intel Corporation in the United States and/or other countries. AMD™, AMD Athlon™, AMD Duron™, AMD-K5™, AMD-K6™, Opteron™, Sempron™, Phenom™ and Turion™ are trademarks and AMD-K6-2® and AMD-K6-III® are registered trademarks of Advanced Micro Devices, Inc. in the United States and/or other countries. Crusoe™ and Efficeon™ are trademarks of Transmeta Corporation in the United States and/or other countries.

Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Dell Inc. disclaims any proprietary interest in trademarks and trade names other than its own.

Contents

1	Introduction	9
	Server Administrator	9
	What's New in This Release	9
	Documenting CIM Classes and Their Properties	10
	Base Classes	11
	Parent Classes	12
	Classes That Describe Relationships	12
	Dell-Defined Classes	12
	Common Properties of Classes	13
	Other Documents You May Need	15
	Typographical Conventions	16
2	CIM_PhysicalElement	19
	CIM_PhysicalElement	19
	CIM_PhysicalPackage	21
	CIM_PhysicalFrame	22
	CIM_Chassis	23
	DELL_Chassis	24
	CIM_PhysicalComponent	26

	CIM_Chip	26
	CIM_PhysicalMemory	28
	CIM_PhysicalConnector	30
	CIM_Slot	33
3	CIM_LogicalElement	37
	CIM_LogicalElement	38
	CIM_System	39
	CIM_ComputerSystem	40
	DELL_System	40
	CIM_LogicalDevice	41
	CIM_FRU	42
	CIM_Sensor	43
	CIM_DiscreteSensor	44
	CIM_NumericSensor	45
	CIM_TemperatureSensor	48
	CIM_CurrentSensor	49
	CIM_VoltageSensor	50
	CIM_Tachometer	51
	CIM_WatchDog	51
	CIM_CoolingDevice	53
	CIM_Fan	53

CIM_UserDevice	54
CIM_PointingDevice	55
CIM_Keyboard	56
CIM_PowerSupply	57
CIM_Controller	60
CIM_ParallelController	61
CIM_SerialController	62
CIM_PCIController	63
CIM_PCIDevice	64
CIM_PCIBridge	65
CIM_Processor	66
CIM_StorageExtent	75
CIM_Memory	76
CIM_CacheMemory	76
CIM_SoftwareElement	78
DELL_SoftwareFeature	82
CIM_SystemResource	83
CIM_IRQ	84
CIM_MemoryMappedIO	86
CIM_DMA	87
CIM_RedundancyGroup	88

	CIM_ExtraCapacityGroup	89
	DELL_PSRedundancyGroup	89
	DELL_FanRedundancyGroup	90
	CIM_EnabledLogicalElementGroup	90
	CIM_ServiceAccessPoint	91
	CIM_RemoteServiceAccessPoint	91
	DELL_RemoteServiceAccessPort	93
4	Dell-Defined Classes	95
	DELL_PostLog	96
	DELL_CMAApplication	96
	DELL_CMDevice	97
	DELL_CMDeviceApplication	98
	DELL_CMIInventory	99
	DELL_CMOS	99
	DELL_CMProductInfo	100
	DELL_BIOSExtensions	101
	DELL_BIOSSettings	102
	DELL_SDCardDevice	103
	DELL_NetworkPort	104
	DELL_PowerConsumptionAmpsSensor	110
	DELL_PowerConsumptionWattsSensor	111

	DELL_PowerConsumptionData	111
	DCIM_OEM_DataAccessModule	112
	DCIM_RegisteredProfile	114
5	CIM_Dependency	113
	DELL_FanSensor	114
	CIM_PackageTempSensor	114
	CIM_PackageVoltSensor	115
	CIM_PackageCurrentSensor	116
	CIM_PackageFanSensor	116
	CIM_PackagePowerSupplySensor	117
	DELL_PackagePSRedundancy	118
	DELL_PSRRedundancy	118
	DELL_AssociatedSupplyPCAmps	119
	DELL_AssociatedSystemPCWatts	120
	AssociatedSystemPCData	120
	DELL_PowerProfileData	121
	Index	123

Introduction

This reference guide documents the Dell OpenManage Server Administrator Common Information Model (CIM) provider contained in the Management Object File (MOF) `dccim32.mof`.

CIM provides a conceptual model for describing manageable objects in a systems management environment. CIM is a modeling tool rather than a programming language. CIM provides the structure for organizing objects into a model of a managed environment. For modeling a managed environment, CIM provides a set of abstract and concrete classes. These classes model the basic characteristics of systems, networks, and applications, as well as groupings of management-related data.

For more information about CIM, see the Distributed Management Task Force (DMTF) website at dmtf.org and the Microsoft website at microsoft.com.

Server Administrator

Server Administrator provides a suite of systems management information to keep track of the networked systems. In addition to providing systems management agents that are independent of the management console, Server Administrator supports the following systems management industry standards: CIM and Simple Network Management Protocol (SNMP).

Server Administrator also provides additional systems management information about the specific components of the Dell system.

What's New in This Release

The highlight of the OpenManage Server Administrator 7.0 release is the inclusion of new enumeration value (NIC capabilities) to the `Dell_NetworkPort` class.

For a list of platforms, operating systems, and browsers support added and deprecated, see the *Dell OpenManage Server Administrator Version 7.0 User's Guide* and *Dell Systems Software Support Matrix Version 7.0* at support.dell.com/manuals.

Documenting CIM Classes and Properties

The Dell CIM provider extends support to Dell-specific software and hardware components. The Dell MOF defines the classes for the Dell CIM provider. All of the supported classes and properties in the MOF are documented in this guide.

The following subsections define some of the basic building blocks of CIM classes that are used in describing the dccim32 provider name. These subsections also explain how the elements used in describing these classes are organized. This section does not document the entire CIM schema, but only those classes and properties supported by the dccim32 provider. The list of properties for each supported class varies greatly.

The property values being presented could be NULL or empty string on some systems, although in general, some non-empty values can be expected. The key properties (listed below) always carry non-empty values. It is recommended that you use only the following properties as key attributes:

- CIM_PhysicalElement: CreationClassName, Tag
- CIM_System: CreationClassName, Name
- CIM_LogicalDevice: SystemCreationClassName, SystemName, CreationClassName, DeviceID
- CIM_Dependency: Antecedent, Dependent
- CIM_SoftwareElement: Name, Version, SoftwareElementState, SoftwareElementID, TargetOperatingSystem
- CIM_SoftwareFeature: IdentifyingNumber, ProductName, Vendor, Version, Name
- CIM_IRQ: CSCreationClassName, CSName, CreationClassName, IRQNumber
- CIM_MemoryMappedIO: CSCreationClassName, CSName, CreationClassName, StartingAddress
- CIM_DMA: CSCreationClassName, CSName, CreationClassName, DMAChannel
- CIM_RedundancyGroup: CreationClassName, Name
- DELL_EsmLog: RecordNumber
- DELL_PostLog: RecordNumber

- `DELL_BIOSExtensions`: `SystemBIOSCharacteristics`
- `DELL_BIOSSettings`: `DisplayName`
- `CIM_ServiceAccessPoint`: `SystemCreationClassName`, `SystemName`, `CreationClassName`, `Name`

Base Classes

The classes listed in the Server Administrator CIM provider class hierarchy do not have a parent property. These base classes do not derive from another class. The base classes are:

- `CIM_ManagedSystemElement`
- `CIM_Dependency`
- `DELL_EsmLog`
- `DELL_PostLog`
- `DELL_CMApplication`
- `DELL_CMDevice`
- `DELL_CMDeviceApplications`
- `DELL_CMInventory`
- `DELL_CMOS`
- `DELL_CMProductInfo`

The `CIM_ManagedSystemElement` class is the base class for the system element hierarchy from which all other CIM classes are derived. As a result, `CIM_ManagedSystemElement` has no parent. Examples of managed system elements include software components such as files, devices such as hard drives and controllers, and physical subcomponents of devices such as chipsets and cards. For the `CIM_ManagedSystemElement` properties, see `Caption`, `CreationClassName`, `Description`, `Name`, and `Status` in Table 1-1.

The Dell-defined classes are not defined in the official schema by the DMTF, the industry group that defines the standards for CIM, and hence do not have parent classes. `CIM_Dependency` does not have a parent class because it is a relationship or association between two managed system elements.

Parent Classes

Most classes in the dccim32 provider document a **Class Name** and a **Parent Class** property. The parent class is the class from which any given class inherits its core properties. For example, the `CIM_Controller` class has the `CIM_LogicalDevice` class as parent and the various types of controllers (`CIM_ParallelController`, `CIM_SerialController`) as children.

Classes That Describe Relationships

Classes that derive from `CIM_Dependency` have `CIM_Dependency` as their parent class, but they are documented in terms of *antecedent* and *dependent* elements in a relationship rather than in terms of common properties. Consider the following relationship between two `CIM_ManagedSystemElements`:

Antecedent	<code>CIM_PackageCurrentSensor</code>
Dependent	<code>CIM_PhysicalPackage</code>

The `CIM_PackageCurrentSensor` class monitors an entire physical package, such as all the components contained in a given system chassis. The `CIM_PhysicalPackage` class is dependent on the `CIM_PackageCurrentSensor` class for this monitoring function.

Dell-Defined Classes

Server Administrator has extended some CIM classes and has created new classes to assist in managing systems and their components. In this document, the illustrations of the classes created and populated by Dell are represented by an orange circle  icon.

Common Properties of Classes

Many classes have certain common properties such as **Caption**, **Description**, and **CreationClassName**. Table 1-1 defines properties that have the same meaning in every class that has this property and are defined more than once in this guide.

Table 1-1. Common Properties of Classes

Property	Description	Data Type
Caption	Describes the object using a short textual description (one-line string).	string
CreationClassName	Indicates the name of the class or the subclass used in the creation of an instance. When used with the other key properties of this class, this property allows all instances of this class and its subclasses to be uniquely identified.	string
CSCreationClassName	Indicates the system's creation class name.	string
CSName	Indicates the system's name.	string
CurrentReading	Indicates the actual current value indicated by the sensor in amperes.	sint32
Description	Provides a textual description of the object.	string
LowerThresholdNonCritical	Indicates if current reading of the system is between the lower threshold non-critical and upper threshold non-critical, the current state is normal. See Figure 3-2.	sint32
LowerThresholdCritical	Indicates if the current reading is between the upper threshold critical and upper threshold fatal, the current state is critical. See Figure 3-2.	sint32
IsLinear	Indicates that the sensor is linear over its dynamic range.	Boolean

Table 1-1. Common Properties of Classes (continued)

Property	Description	Data Type
Manufacturer	Provides the name of the organization responsible for producing the CIM_PhysicalElement or CIM_SoftwareElement. This may be the entity from whom the element is purchased. Purchase information is contained in the Vendor property of CIM_Product.	string
Name	Defines the label by which the object is known. When subclassed, the Name property can be overridden to be a Key property.	string
Status	<p>Provides a string indicating the status of the component. Status values include:</p> <p>Operational Status Values:</p> <p>OK indicates that the object is functioning normally.</p> <p>Degraded indicates that the item is functioning, but not optimally.</p> <p>Stressed indicates that the element is functioning, but needs attention. Examples of Stressed states are overloaded, overheated, and so on.</p> <p>Nonoperational Status Values:</p> <p>Non-recover indicates that a nonrecoverable error has occurred.</p> <p>Error indicates that an element has encountered an operational condition that is severe as compared to its normal mode of operation.</p>	string
SystemCreationClassName	Indicates the system's creation class name.	string

Table 1-1. Common Properties of Classes (continued)

Property	Description	Data Type
UnitModifier	Provides the unit multiplier for the values returned by this sensor. All the values returned by this sensor are represented in units of 10 raised to the power of the unit modifier. If the unit modifier is -6, then the units of the values returned are microvolts. The units apply to all numeric properties of the sensor, unless explicitly overridden by the units' qualifier.	sint32
UpperThresholdCritical	Indicates if the current system reading is between the upper threshold critical and upper threshold fatal, the current status is critical. See Figure 3-2.	sint32
UpperThresholdNonCritical	If the current reading is between lower threshold noncritical and lower threshold critical, the current status is noncritical. See Figure 3-2.	sint32
Version	Version should be in the form <code><major>.<minor>.<revision></code> or <code><major>.<minor><letter><revision></code> ; for example, 1.2.3 or 1.2a3.	string

Other Documents You May Need

Besides this *Dell OpenManage Server Administrator CIM Reference Guide*, you can find the following documents at support.dell.com/manuals:

- *Dell OpenManage Server Administrator User's Guide* documents the features, installation, and uninstallation of Server Administrator.
- *Dell OpenManage Server Administrator Installation Guide* contains instructions to help you install Dell OpenManage Server Administrator.
- *Dell OpenManage Management Station Software Installation Guide* contains instructions to help you install Dell OpenManage management station software.

- *Dell OpenManage Server Administrator Command Line Interface User's Guide* explains how to perform tasks using the text-based command line interface.
- *Dell OpenManage Server Administrator Messages Reference Guide* lists the messages that you can receive on the systems management console or on the operating system's event viewer.
- *Dell OpenManage Server Administrator SNMP Reference Guide* documents the SNMP management information base (MIB).
- The *Glossary* for information on terms used in this document.

Typographical Conventions

The following example shows how most of the classes in the Dell CIM provider are documented. Table 1-2 shows a partial class description for the `DELL_DMA` class.



NOTE: For a full class description, see Table 3-38.

Class Name appears in `Courier` typeface and provides the string that names the class in the MOF.

Parent Class appears in `Courier` typeface and provides the name of the class from which the present class is derived.

Property denotes the name of the attribute that is being defined for this class.

Description includes text that defines the property.

Data Type stipulates the format that the values of this property must take. Common data types include boolean, string, and various types of integer. Boolean indicates that the property must be expressed as one of two alternatives.

Table 1-2. CIM_DMA Properties

Class Name:	<code>CIM_DMA</code>	
Parent Class:	<code>CIM_SystemResource</code>	
Property	Description	Data Type
<code>DMACHannel</code>	A part of the object's key value, the DMA channel number.	<code>uint32</code>

Class Name: CIM_DMA

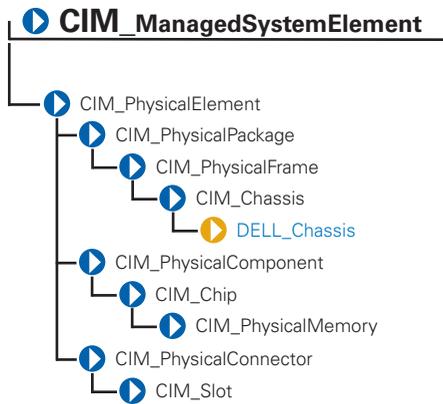
Parent Class: CIM_SystemResource

Property	Description	Data Type
Availability	Availability of the DMA. Availability values are defined as follows: 1 - Other 2 - Unknown 3 - Available 4 - In use/Not available 5 - In use and available/Shareable	uint16

CIM_PhysicalElement

CIM_PhysicalElement is a CIM-defined class. The CIM_PhysicalElement class contains the subclasses shown in Figure 2-1.

Figure 2-1. CIM_PhysicalElement Class Structure



CIM_PhysicalElement



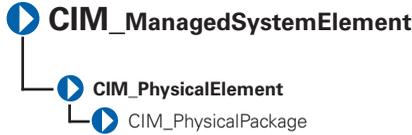
Subclasses of the CIM_PhysicalElement class listed in Table 2-1 define any component of a system that has a distinct physical identity. Physical elements are tangible managed system elements (usually actual hardware items) that have a physical manifestation of some sort. By contrast, processes, files, and logical devices are not classified as physical elements. A managed system element is not necessarily a discrete component. A single card (which is a type of physical element) can host more than one logical device.

One card, for example, could implement both a modem and a local area network (LAN) adapter. In this case, the card would be represented by a single physical element associated with multiple logical devices.

Table 2-1. CIM_PhysicalElement Properties

Class Name:	CIM_PhysicalElement	
Parent Class:	CIM_ManagedSystemElement	
Property	Description	Data Type
CreationClassName	See Table 1-1.	
Manufacturer	See Table 1-1.	
Model	The name by which the physical element is generally known.	string
SerialNumber	A manufacturer-allocated number used to identify the physical element.	string
Tag	Uniquely identifies the physical element and serves as the element's key. The Tag property can contain information such as asset tag or serial number data. The key for a physical element is placed very high in the object hierarchy in order to identify the hardware/entity independently, regardless of the physical placement in or on cabinets, adapters, and so on. For example, a hot-swappable or removable component can be taken from its containing (scoping) package and be temporarily unused. The object still continues to exist and may even be inserted into a different scoping container. Therefore, the key for the physical element is an arbitrary string that is defined independently of any placement or location-oriented hierarchy.	string

CIM_PhysicalPackage



The `CIM_PhysicalPackage` class listed in Table 2-2 represents physical elements that contain or host other components. Examples are a rack enclosure or an adapter card with multiple functions.

Table 2-2. CIM_PhysicalPackage Properties

Class Name:	<code>CIM_PhysicalPackage</code>	
Parent Class:	<code>CIM_PhysicalElement</code>	
Property	Description	Data Type
Removable	A <code>CIM_PhysicalPackage</code> is removable if it is designed to be taken in and out of the physical container in which it is normally found without impairing the function of the overall package.	Boolean
Replaceable	A <code>CIM_PhysicalPackage</code> is replaceable if it is possible to substitute a physically different element for the original element, as in a field replaceable unit (FRU). For example, some computer systems allow the microprocessor to be upgraded to one of a higher clock rating. In this case, the microprocessor is said to be replaceable.	Boolean

CIM_PhysicalFrame

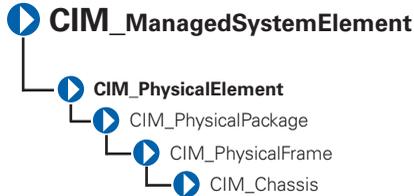


The `CIM_PhysicalFrame` class described in Table 2-3 contains other frame enclosures such as racks and chassis. Properties such as **VisibleAlarm** or **AudibleAlarm**, and data related to security breaches are also members of this class.

Table 2-3. CIM_Physical Frame Properties

Class Name:	<code>CIM_PhysicalFrame</code>	
Parent Class:	<code>CIM_PhysicalPackage</code>	
Property	Description	Data Type
<code>LockPresent</code>	Indicates if the frame is protected with a lock.	Boolean
<code>AudibleAlarm</code>	Indicates if the frame is equipped with an audible alarm.	Boolean
<code>VisibleAlarm</code>	Indicates if the equipment includes a visible alarm.	Boolean
<code>SecurityBreach</code>	An enumerated, integer-valued property indicating that a physical breach of the frame is in progress. Values for the SecurityBreach property are: 1 - Other 2 - Unknown 3 - No breach 4 - Breach attempted 5 - Breach successful	uint16
<code>IsLocked</code>	Indicates if the frame is currently locked.	Boolean

CIM_Chassis

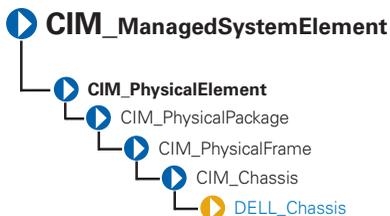


The `CIM_Chassis` class described in Table 2-4 represents the physical elements that enclose physical elements such as power supplies, fans, and processors.

Table 2-4. CIM_Chassis Parent Properties

Class Name:	<code>CIM_Chassis</code>	
Parent Class:	<code>CIM_PhysicalFrame</code>	
Property	Description	Data Type
<code>ChassisTypes</code>	Values for the <code>ChassisTypes</code> property are: 1 - Other 2 - Unknown 3 - Mini-tower 4 - Tower 5 - Space-saving 6 - Main system chassis 7 - Expansion chassis 8 - Subchassis 9 - Space-saving 10 - Main system chassis 11 - Expansion chassis 12 - Subchassis 13 - Bus expansion chassis 14 - Peripheral chassis 15 - Storage chassis 16 - Rack-mount chassis	<code>uint16</code>

DELL_Chassis



The `DELL_Chassis` class listed in Table 2-5 defines the identification and status properties of the chassis. `DELL_Chassis` inherits from CIM-defined classes, but is populated by Dell properties.

Table 2-5. DELL_Chassis Properties

Class Name:	<code>DELL_Chassis</code>	
Parent Class:	<code>CIM_Chassis</code>	
Property	Description	Data Type
<code>AssetTag</code>	Indicates the container <code>AssetTag</code> string. This asset tag string is assigned by the system administrator.	string
<code>SystemClass</code>	Indicates the system type that is installed and running the instrumentation. Values for the <code>SystemClass</code> property are: 1 - Other 2 - Unknown 3 - Workstation 4 - Server 5 - Desktop 6 - Portable 7 - Net PC	uint16
<code>SystemID</code>	Indicates the system identifier code.	uint16

Table 2-5. DELL_Chassis Properties (continued)

Class Name:	DELL_Chassis	
Parent Class:	CIM_Chassis	
Property	Description	Data Type
LogFormat	Defines whether the event log data is in unicode or binary (raw) format. Values for the event LogFormat property are: 1 - Formatted (event log only) 2 - Unformatted 3 - Events_and_POST_Formatted (both the event log and power-on self-test [POST] log are in unicode format)	uint16
FanStatus	Indicates the global status of fan sensors.	string
TempStatus	Indicates the global status of temperature sensors.	string
VoltStatus	Indicates the global status of voltage sensors.	string
AmpStatus	Indicates the global status of current sensors.	string
PsStatus	Indicates the global status of power supplies.	string
MemStatus	Indicates the global status of memory devices.	string
ProcStatus	Indicates the global status of processor devices.	string
FanRedStatus	Indicates the global status of the cooling unit.	string
PsRedStatus	Indicates the global status of the power unit.	string
IsDefaultThrSupported	Indicates whether resetting default thresholds are supported.	Boolean
ChassisSystemProperties	Indicates chassis characteristics such as energy smart and so on.	uint16
ChassisSystemRevision	Indicates the chassis revision.	uint16
EsmLogStatus	Indicates the global status of ESM log.	string
MemoryRedStatus	Indicates the global status of memory redundancy.	string

Table 2-5. DELL_Chassis Properties (continued)

Class Name:	DELL_Chassis	
Parent Class:	CIM_Chassis	
Property	Description	Data Type
ChassisExpressServiceCode	Indicates the chassis express service code	string

CIM_PhysicalComponent



The `CIM_PhysicalComponent` class listed in Table 2-6 represents any low-level or basic component within a package. A component object either cannot or does not need to be broken down into its constituent parts. For example, an application specific integrated circuit (ASIC) cannot be broken down into smaller discrete parts.

Table 2-6. CIM_PhysicalComponent Properties

Class Name:	<code>CIM_PhysicalComponent</code>
Parent Class:	<code>CIM_PhysicalElement</code>

CIM_Chip

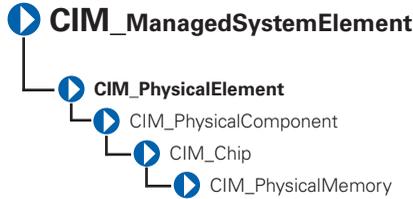


The `CIM_Chip` class listed in Table 2-7 represents any type of integrated circuit hardware, including ASICs, processors, memory chips, and so on.

Table 2-7. CIM_Chip Properties

Class Name:	CIM_Chip	
Parent Class:	CIM_PhysicalComponent	
Property	Description	Data Type
FormFactor	0 - Unknown 1 - Other 2 - SIP 3 - DIP 4 - ZIP 5 - SOJ 6 - Proprietary 7 - SIMM 8 - DIMM 9 - TSOP 10 - PGA 11 - RIMM 12 - SODIMM 13 - SRIMM 14 - SMD 15 - SSMP 16 - QFP 17 - TQFP 18 - SOIC 19 - LCC 20 - PLCC 21 - BGA 22 - FPBGA 23 - LGA 24 - FB-DIMM	uint16

CIM_PhysicalMemory



The `CIM_PhysicalMemory` class listed in Table 2-8 is a subclass of `CIM_Chip`, representing low-level memory devices, such as SIMMs, DIMMs, and so on.

Table 2-8. CIM_PhysicalMemory Properties

Class Name:	<code>CIM_PhysicalMemory</code>	
Parent Class:	<code>CIM_Chip</code>	
Property	Description	Data Type
<code>FormFactor</code>	See Table 2-7.	<code>uint16</code>
<code>MemoryType</code>	Indicates the type of physical memory. Values for the <code>MemoryType</code> property are: 0 - Unknown 1 - Other 2 - DRAM 3 - Synchronous DRAM 4 - Cache DRAM 5 - EDO 6 - EDRAM 7 - VRAM 8 - SRAM 9 - RAM 10 - ROM	<code>uint16</code>

Table 2-8. CIM_PhysicalMemory Properties (continued)

Class Name:	CIM_PhysicalMemory	
Parent Class:	CIM_Chip	
Property	Description	Data Type
MemoryType (continued)	11 - Flash 12 - EEPROM 13 - FEPRAM 14 - EPROM 15 - CDRAM 16 - 3DRAM 17 - SDRAM 18 - SGRAM 19 - RDRAM 20 - DDR 21 - DDR2 22 - DDR2 FB-DIMM 24 - DDR3 25 - FBD2	
TotalWidth	Indicates the total width, in bits, of the physical memory, including check or error correction bits. If there are no error correction bits, the value in this property should match that specified for the DataWidth property.	uint16
DataWidth	Indicates the data width, in bits, of the physical memory. A data width of 0 and a total width of 8 would indicate that the memory is solely used to provide error correction bits.	uint16
Speed	Indicates the speed of the physical memory, in nanoseconds.	uint32
SpeedAsString	Indicates the accurate speed of the physical memory, in string format (with units).	string
Capacity	Indicates the total capacity of this physical memory, in bytes.	uint64

Table 2-8. CIM_PhysicalMemory Properties (continued)

Class Name:	CIM_PhysicalMemory	
Parent Class:	CIM_Chip	
Property	Description	Data Type
BankLabel	A string identifying the physically labeled bank where the memory is located, for example, "Bank 0" or "Bank A."	string
PositionInRow	Specifies the position of the physical memory in a "row." For example, if it takes two 8-bit memory devices to form a 16-bit row, then a value of 2 means that this memory is the second device. 0 is an invalid value for this property.	uint32
InterleavePosition	Indicates the position of this physical memory in an interleave. 0 indicates noninterleaved. 1 indicates the first position, 2 the second position, and so on. For example, in a 2:1 interleave, a value of 1 indicates that the memory is in the "even" position.	uint32

CIM_PhysicalConnector



The `CIM_PhysicalConnector` class listed in Table 2-9 includes physical elements such as plugs, jacks, or buses that connect physical elements. Any object that can be used to connect and transmit signals or power between two or more physical elements is a member of this class. For example, slots and D-shell connectors are types of physical connectors. See Table 2-10 for a list of valid connector type values.

Table 2-9. CIM_PhysicalConnector Properties

Class Name:	CIM_PhysicalConnector	
Parent Class:	CIM_PhysicalElement	
Property	Description	Data Type
ConnectorPinout	A free-form string describing the pin configuration and signal usage of a physical connector.	string
ConnectorType	An array of integers defining the type of physical connector. An array is specified to allow the description of “combinations” of connector information. For example, one array entry could specify RS-232, another DB-25, and a third entry could define the connector as male. See Table 2-10 for the values of the ConnectorType property.	uint16

Table 2-10. Connector Type Values

0 - Unknown	30 - <i>unused</i>	60 - Micro-DIN	90 - On board IDE Connector
1 - Other	31 - <i>unused</i>	61 - PS/2	91 - On board floppy connector
2 - Male	32 - IEEE-48	62 - Infrared	92 - 9 Pin dual inline
3 - Female	33 - AUI	63 - <i>unused</i>	93 - 25 Pin dual inline
4 - Shielded	34 - UTP Category 3	64 - Access bus	94 - 50 Pin dual inline
5 - Unshielded	35 - UTP Category 4	65 - <i>unused</i>	95 - 68 Pin dual inline
6 - SCSI (A) High-Density (50 pins)	36 - UTP Category 5	66 - Centronics	96 - On board sound connector
7 - SCSI (A) Low-Density (50 pins)	37 - BNC	67 - Mini-Centronics	97 - Mini-jack
8 - SCSI (P) High-Density (68 pins)	38 - RJ11	68 - Mini-Centronics Type-14	98 - PCI-X
9 - SCSI SCA-I (80 pins)	39 - RJ45	69 - Mini-Centronics Type-20	99 - Sbus IEEE 1396-1993 32-bit
10 - SCSI SCA-II (80 pins)	40 - Fiber MIC	70 - Mini-Centronics Type-26	100 - Sbus IEEE 1396-1993 64-bit

Table 2-10. Connector Type Values (continued)

11 - Fibre Channel (DB-9 Copper)	41 - <i>unused</i>	71 - Bus mouse	101 - <i>unused</i>
12 - Fibre Channel (Fiber Optical)	42 - <i>unused</i>	72 - ADB	102 - GIO
13 - Fibre Channel SCA-II (40 pins)	43 - PCI	73 - AGP	103 - XIO
14 - Fibre Channel SCA-II (20 pins)	44 - ISA	74 - VME bus	104 - HIO
15 - Fibre Channel BNC	45 - <i>unused</i>	75 - VME64	105 - NGIO
16 - ATA 3-1/2 inch (40 pins)	46 - VESA	76 - Proprietary	106 - PMC
17 - ATA 2-1/2 inch (44 pins)	47 - <i>unused</i>	77 - Proprietary processor card slot	107 - MTRJ
18 - ATA-2	48 - <i>unused</i>	78 - Proprietary memory card slot	108 - VF-45
19 - ATA-3	49 - <i>unused</i>	79 - Proprietary I/O riser slot	109 - Future I/O
20 - ATA/66	50 - <i>unused</i>	80 - PCI-66 MHz	110 - SC
21 - DB-9	51 - <i>unused</i>	81 - AGP2X	111 - SG
22 - DB-15	52 - <i>unused</i>	82 - AGP4X	112 - Electrical
23 - DB-25	53 - USB	83 - PC-98	113 - Optical
24 - DB-36	54 - IEEE 1394	84 - PC-98-Hireso	114 - Ribbon
25 - RS-232C	55 - HIPPI	85 - PC-H98	115 - GLM
26 - RS-422	56 - HSSDC (6 pins)	86 - PC-98Note	116 - 1x9
27 - RS-423	57 - GBIC	87 - PC-98Full	117 - Mini SG
28 - RS-485	58 - DIN	88 - SSA SCSI	118 - LC
29 - RS-449	59 - Mini-DIN	89 - Circular	119 - HSSC

CIM_Slot



The `CIM_Slot` class listed in Table 2-11 represents connectors into which packages are inserted. For example, a physical package that is a hard drive can be inserted into a small computer system interface-single connector attachment (SCSI-SCA) slot. As another example, a card can be inserted into a 16-, 32-, or 64-bit expansion slot on a host board.

Table 2-11. CIM_Slot Properties

Class Name:	class <code>CIM_Slot</code>	
Parent Class:	<code>CIM_PhysicalConnector</code>	
Property	Description	Data Type
ConnectorType	See Table 2-10.	uint16
SupportsHotPlug	Indicates whether the slot supports hot-plug adapter cards.	Boolean
MaxDataWidth	Indicates the maximum bus width in bits of adapter cards that can be inserted into this slot. Values for the <code>MaxDataWidth</code> property are as follows: 0 - Unknown 1 - Other 8 - bits 16 - bits 32 - bits 64 - bits 128 - bits	uint16

Table 2-11. CIM_Slot Properties (continued)

Class Name:	class CIM_Slot	
Parent Class:	CIM_PhysicalConnector	
Property	Description	Data Type
SystemSlotType	Indicates the type of system slot. Values for the SystemSlotType property are as follows: 1 - Other 2 - Unknown 3 - ISA 4 - MCA 5 - EISA 6 - PCI 7 - PCMCIA 8 - VL-VESA 9 - Proprietary 10 - Processor card Slot 11 - Proprietary memory card slot 12 - I/O Riser card slot 13 - NuBus 14 - PCI - 66MHz capable 15 - AGP 16 - AGP 2X 17 - AGP 4X 18 - PCI-X 19 - AGP 8X 160 - PC-98/C20 161 - PC-98/C24 162 - PC-98/E 163 - PC-98/Local bus 164 - PC-98/Card 165 - PCI Express 166 - PCI Express x1 167 - PCI Express x2	

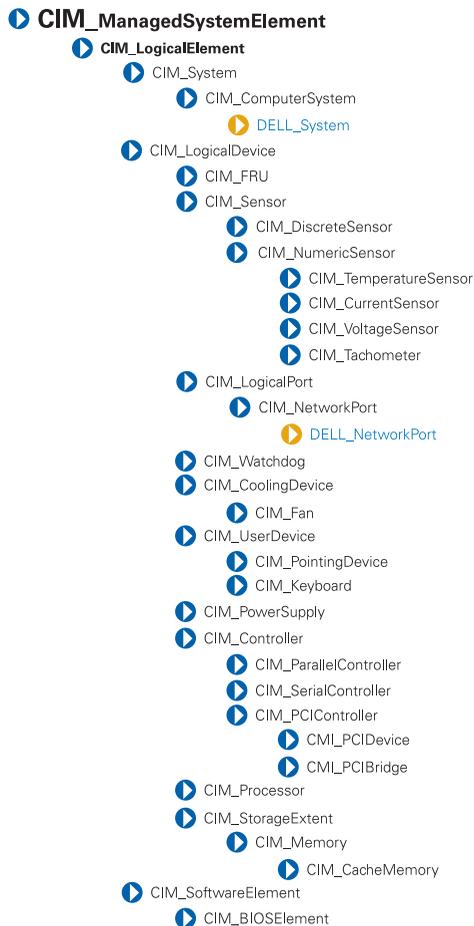
Table 2-11. CIM_Slot Properties (continued)

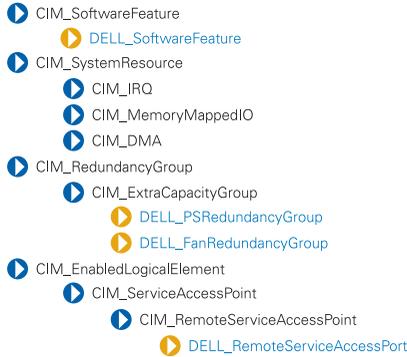
Class Name:	class CIM_Slot	
Parent Class:	CIM_PhysicalConnector	
Property	Description	Data Type
SystemSlotType (continued)	168 - PCI Express x4	
	169 - PCI Express x8	
	170 - PCI Express x16	
	171 - PCI Express Gen 2	
	172 - PCI Express Gen 2 x1	
	173 - PCI Express Gen 2 x2	
	174 - PCI Express Gen 2 x4	
	175 - PCI Express Gen 2 x8	
	176 - PCI Express Gen 2 x16	

CIM_LogicalElement

CIM_LogicalElement is a CIM-defined class containing the subclasses described in Figure 3-1.

Figure 3-1. CIM_LogicalElement Class Structure





CIM_LogicalElement



Table 3-1 lists the following characteristics for members of the CIM_LogicalElement class:

- Represent abstractions used to manage and coordinate aspects of a physical environment such as files, processes, systems, system capabilities, and network components in the form of logical devices
- Represent devices, where devices are abstractions of hardware entities that may or may not be realized in physical hardware

Table 3-1. CIM_LogicalElement Properties

Class Name:	CIM_LogicalElement
Parent Class:	CIM_ManagedSystemElement

CIM_System

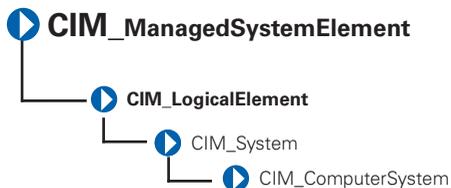


The `CIM_System` class described in Table 3-2 defines a collection of managed system elements that operates as a functional whole. An instance of the `CIM_System` class contains a well-defined list of components that work together to perform a specific function.

Table 3-2. CIM_System Properties

Class Name:	<code>CIM_System</code>	
Parent Class:	<code>CIM_LogicalElement</code>	
Property	Description	Data Type
<code>CreationClassName</code>	See Table 1-1.	string
<code>Name</code>	Indicates the name of a specific system, such as a particular storage system or server.	string
<code>PrimaryOwnerContact</code>	Provides information about how the primary system owner can be reached, for example, a phone number or e-mail address.	string
<code>PrimaryOwnerName</code>	Indicates the name of the primary system owner.	string
<code>Roles</code>	An array of strings that specifies the roles this system plays in the IT environment. For example, for an instance of a network system, the Roles property might contain the string "storage system."	string

CIM_ComputerSystem



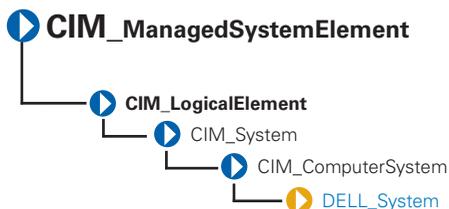
The CIM_ComputerSystem class described in Table 3-3 contains some or all of the following CIM_ManagedSystemElements: file system, operating system, processor, and memory (volatile and/or nonvolatile storage). For properties, see Table 3-2.

Table 3-3. CIM_ComputerSystem Properties

Class Name: CIM_ComputerSystem

Parent Class: CIM_System

DELL_System



The DELL_System class described in Table 3-4 is the set of all Dell instrumented systems, including server, and storage systems. For properties, see Table 3-2.

Table 3-4. DELL_System Properties

Class Name: DELL_System

Parent Class: CIM_ComputerSystem

CIM_LogicalDevice

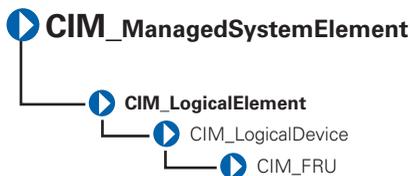


The `CIM_LogicalDevice` class described in Table 3-5 models a hardware entity that may be realized in physical hardware. `CIM_LogicalDevice` includes any characteristics of a logical device that manages its operation or configuration. An example of a logical device is a temperature sensor’s reading of the actual temperature.

Table 3-5. CIM_Logical Device Properties

Class Name:	CIM_LogicalDevice	
Parent Class:	CIM_LogicalElement	
Property	Description	Data Type
SystemCreationClassName	See Table 1-1.	string
SystemName	Indicates the scoping system’s name.	string
CreationClassName	See Table 1-1.	string
DeviceID	Identifies an address or other identifying information to uniquely name the logical device.	string

CIM_FRU

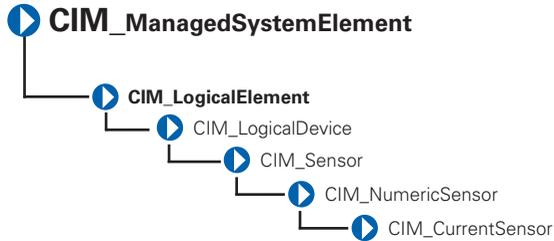


The `CIM_FRU` class described in Table 3-6 contains manufacturing information related to the Field Replaceable Units (FRU) of a system such as a system planar or I/O riser card.

Table 3-6. CIM_FRU Properties

Class Name:	<code>CIM_FRU</code>	
Parent Class:	<code>CIM_LogicalDevice</code>	
Property	Description	Data Type
<code>FRUInformationState</code>	Indicates the state and availability of FRU information.	uint 16
<code>FRUDeviceName</code>	Indicates the device name of the FRU.	string
<code>FRUManufacturingDateName</code>	Indicates the manufacturing date of the FRU in ticks.	datetime
<code>FRUManufacturerName</code>	Indicates the name of the manufacturer.	string
<code>FRUPartNumberName</code>	Indicates the FRU part number.	string
<code>FRUSerialNumberName</code>	Indicates the FRU serial number.	string
<code>FRURevisionName</code>	Indicates the FRU revision number.	string

CIM_Sensor



The `CIM_Sensor` class described in Table 3-7 contains hardware devices capable of measuring the characteristics of some physical property, for example, the temperature or voltage characteristics of a computer system.

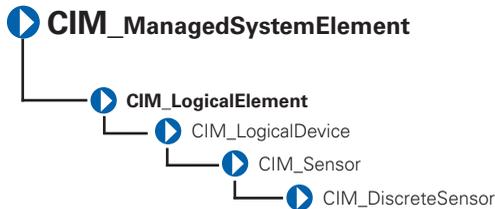
Table 3-7. CIM_Sensor Properties

Class Name:	CIM_Sensor	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
SensorType	Indicates the type of the sensor, for example, voltage or temperature sensor. Values for the SensorType property are: 0 - Unknown 1 - Other 2 - Temperature sensors measure the environmental temperature. 3 - Voltage sensors measure electrical voltage. 4 - Current sensors measure current readings. 5 - Tachometers measure speed/revolutions of a device. For example, a fan device can have an associated tachometer that measures its speed. 6 - Batteries maintain the time and date and save the system's BIOS configuration when the system is turned off.	uint16
OtherSensorType Description	Indicates the type of sensor when the SensorType property is set to Other .	string

Table 3-7. CIM_Sensor Properties (continued)

Class Name:	CIM_Sensor	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
PossibleStates	Enumerates the string outputs of the sensor. For example, a NumericSensor can report states based on threshold readings.	string
CurrentState	Indicates the current state of the sensor. This value is always one of the Possible States.	string
PollingInterval	Indicates the polling interval, in nanoseconds, that the sensor hardware or instrumentation uses to determine the current state of the sensor.	uint64

CIM_DiscreteSensor

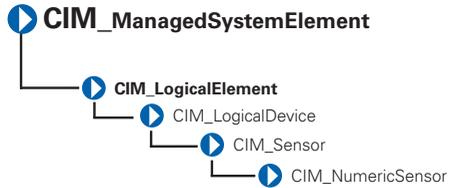


The CIM_DiscreteSensor class described in Table 3-8 has a set of legal string values that it can report. The CIM_DiscreteSensor always has a "current reading" that corresponds to one of the enumerated values.

Table 3-8. CIM_DiscreteSensor Properties

Class Name:	CIM_DiscreteSensor	
Parent Class:	CIM_Sensor	
Property	Description	Data Type
CurrentReading	See Table 1-1.	sint32
PossibleValues	Enumerates the string outputs that can be reported by the sensor.	sint32

CIM_NumericSensor



The `CIM_NumericSensor` class described in Table 3-9 returns numeric settings and may also support threshold settings. Figure 3-2 shows the relationship among upper and lower critical and upper and lower non-critical threshold values. The normal range falls between upper and lower non-critical thresholds.

Figure 3-2. Ranges for Threshold Values

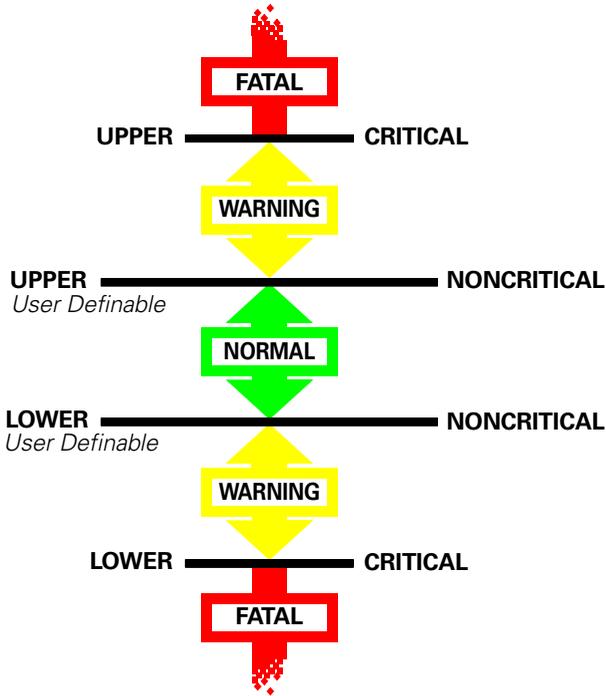


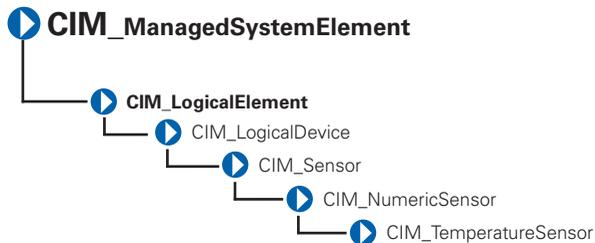
Table 3-9. CIM_NumericSensor Properties

Class Name:	CIM_NumericSensor	
Parent Class:	CIM_Sensor	
Property	Description	Data Type
UnitModifier	See Table 1-1.	sint32
CurrentReading	See Table 1-1.	sint32
IsLinear	See Table 1-1.	Boolean
LowerThresholdNonCritical	See Table 1-1.	sint32
UpperThresholdNonCritical	See Table 1-1.	sint32
LowerThresholdCritical	See Table 1-1.	sint32

Table 3-9. CIM_NumericSensor Properties (continued)

Class Name:	CIM_NumericSensor	
Parent Class:	CIM_Sensor	
Property	Description	Data Type
UpperThresholdCritical	See Table 1-1.	sint32
SupportedThresholds	An array representing the thresholds supported by this sensor. The supported values are as follows: 1 - LowerThresholdNonCritical 2 - UpperThresholdNonCritical 3 - LowerThresholdCritical 4 - UpperThresholdCritical	uint16
EnabledThresholds	An array representing the thresholds that are currently enabled for this sensor. Enabled threshold values are as follows: 1 - LowerThresholdNonCritical 2 - UpperThresholdNonCritical 3 - LowerThresholdCritical 4 - UpperThresholdCritical	uint16
SettableThresholds	An array representing the writable thresholds supported by this sensor. Settable threshold values are: 1 - LowerThresholdNonCritical 2 - UpperThresholdNonCritical	uint16

CIM_TemperatureSensor

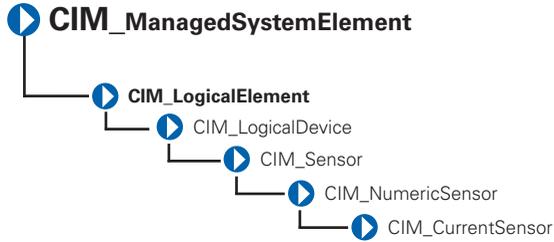


The CIM_TemperatureSensor class described in Table 3-10 contains sensors that sample ambient temperature and return a value in degrees celsius.

Table 3-10. CIM_TemperatureSensor Properties

Class Name:	CIM_TemperatureSensor	
Parent Class:	CIM_NumericSensor	
Property	Description	Data Type
UnitModifier	See Table 1-1.	sint32
CurrentReading	See Table 1-1.	sint32
IsLinear	See Table 1-1.	Boolean
LowerThresholdNonCritical	See Table 1-1.	sint32
UpperThresholdNonCritical	See Table 1-1.	sint32
LowerThresholdCritical	See Table 1-1.	sint32
UpperThresholdCritical	See Table 1-1.	sint32

CIM_CurrentSensor

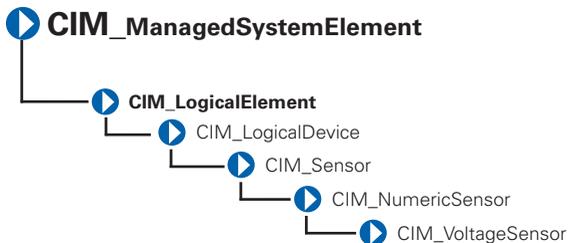


The CIM_CurrentSensor class described in Table 3-11 contains sensors that measure amperage and return a value in amperes and watts.

Table 3-11. CIM_CurrentSensor Properties

Class Name:	CIM_CurrentSensor	
Parent Class:	CIM_NumericSensor	
Property	Description	Data Type
UnitModifier	See Table 1-1.	sint32
CurrentReading	See Table 1-1.	sint32
IsLinear	See Table 1-1.	Boolean
LowerThresholdNonCritical	See Table 1-1.	sint32
UpperThresholdNonCritical	See Table 1-1.	sint32
LowerThresholdCritical	See Table 1-1.	sint32
UpperThresholdCritical	See Table 1-1.	sint32

CIM_VoltageSensor

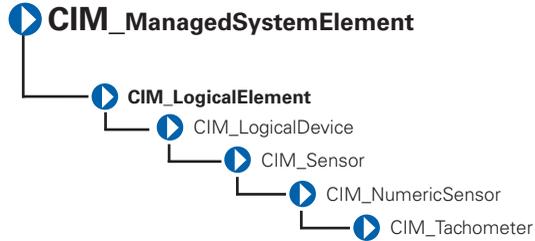


The CIM_VoltageSensor class described in Table 3-12 contains sensors that measure voltage and return a value in volts.

Table 3-12. CIM_VoltageSensor Properties

Class Name:	CIM_VoltageSensor	
Parent Class:	CIM_NumericSensor	
Property	Description	Data Type
UnitModifier	See Table 1-1.	sint32
CurrentReading	See Table 1-1.	sint32
IsLinear	See Table 1-1.	Boolean
LowerThresholdNonCritical	See Table 1-1.	sint32
UpperThresholdNonCritical	See Table 1-1.	sint32
LowerThresholdCritical	See Table 1-1.	sint32
UpperThresholdCritical	See Table 1-1.	sint32

CIM_Tachometer

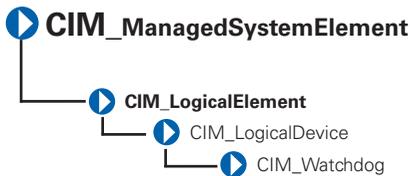


The CIM_Tachometer class described in Table 3-13 contains devices that measure revolutions per minute (RPM) of a fan and return the value in RPMs.

Table 3-13. CIM_Tachometer Properties

Class Name:	CIM_Tachometer	
Parent Class:	CIM_NumericSensor	
Property	Description	Data Type
SensorType	See Table 1-1.	uint16
UnitModifier	See Table 1-1.	sint32
CurrentReading	See Table 1-1.	sint32
IsLinear	See Table 1-1.	Boolean
LowerThresholdNonCritical	See Table 1-1.	sint32
UpperThresholdNonCritical	See Table 1-1.	sint32

CIM_WatchDog

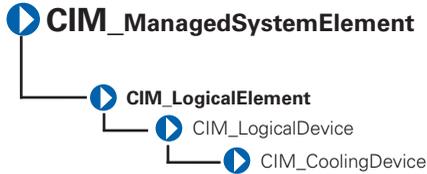


The `CIM_WatchDog` class described in Table 3-14 represents a timer that is implemented in the system hardware. The watchdog feature allows the hardware to monitor the state of the operating system, BIOS, or a software component installed on the system. If the monitored component fails to reset the timer before its expiration, the hardware assumes that the system is in a critical state and could reset the system. This feature can also be used as an application watchdog timer for a mission-critical application. In this case, the application would assume responsibility for rearming the timer before expiration.

Table 3-14. CIM_WatchDog Properties

Class Name:	CIM_WatchDog	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
MonitoredEntity	Indicates the entity that is currently being monitored by the watchdog feature. This property is used to identify the module that is responsible for rearming the watchdog at periodic intervals. Values for the MonitoredEntity property are: 1 - Unknown 2 - Other 3 - Operating System	uint16
MonitoredEntity Description	Describes additional textual information about the monitored entity.	string
TimeoutInterval	Indicates the time-out interval used by the watchdog, in microseconds.	uint32
TimerResolution	Indicates the resolution of the watchdog timer. For example, if this value is 100, then the timer can expire anytime between -100 microseconds and +100 microseconds.	uint32

CIM_CoolingDevice

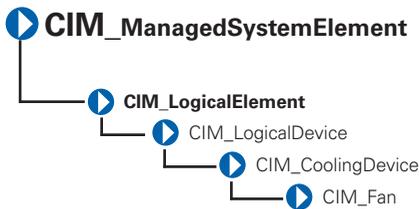


The CIM_CoolingDevice class described in Table 3-15 contains a set of devices that work to keep the ambient internal temperature of the system at a safe value.

Table 3-15. CIM_CoolingDevice Properties

Class Name:	CIM_CoolingDevice	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
ActiveCooling	Specifies if the device provides active (as opposed to passive) cooling.	Boolean

CIM_Fan

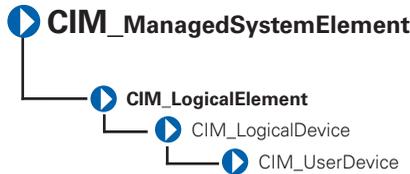


The CIM_Fan class described in Table 3-16 contains a set of devices that work to keep the ambient internal temperature of the system at a safe value by circulating air.

Table 3-16. CIM_Fan Properties

Class Name:	CIM_Fan	
Parent Class:	CIM_CoolingDevice	
Property	Description	Data Type
VariableSpeed	Specifies if the fan supports variable speeds.	Boolean
DesiredSpeed	Indicates the currently requested fan speed, defined in RPM. When the VariableSpeed value is TRUE, the fan supports variable speeds. When a variable speed fan is supported (VariableSpeed is TRUE), the actual speed is determined using a sensor (CIM_Tachometer) that is associated with the fan.	uint64

CIM_UserDevice

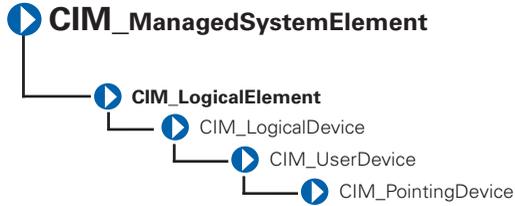


The CIM_UserDevice class described in Table 3-17 contains logical devices that allow a system’s users to input or view data. Classes derived from CIM_UserDevice include CIM_Keyboard and CIM_PointingDevice.

Table 3-17. CIM_UserDevice Properties

Class Name:	CIM_UserDevice	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
IsLocked	Indicates if the device is locked, preventing user input or output.	Boolean

CIM_PointingDevice



The `CIM_PointingDevice` class described in Table 3-18 includes those devices used to point to regions of a display. Examples of such devices are a mouse or a trackball.

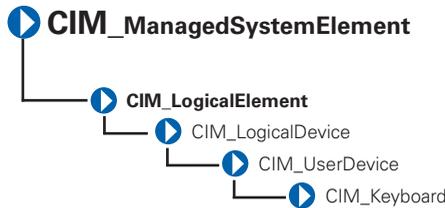
Table 3-18. CIM_PointingDevice Properties

Class Name:	<code>CIM_PointingDevice</code>	
Parent Class:	<code>CIM_UserDevice</code>	
Property	Description	Data Type
PointingType	Indicates the type of pointing device. Values for the PointingType property are: 1 - Other 2 - Unknown 3 - Mouse 4 - Trackball 5 - Trackpoint 6 - Glidepoint 7 - Touch pad 8 - Touch screen 9 - Mouse—optical sensor	uint16
NumberOfButtons	Indicates the number of buttons. If the <code>CIM_PointingDevice</code> has no buttons, a value of 0 is returned.	uint8

Table 3-18. CIM_PointingDevice Properties (continued)

Class Name:	CIM_PointingDevice	
Parent Class:	CIM_UserDevice	
Property	Description	Data Type
Handedness	Integer indicating if the CIM_PointingDevice is configured for right- or left-handed operation. Values for the Handedness property are as follows: 0 - Unknown 1 - Not applicable 2 - Right-handed operation 3 - Left-handed operation	uint16

CIM_Keyboard



The CIM_Keyboard class described in Table 3-19 includes devices that allow users to enter data.

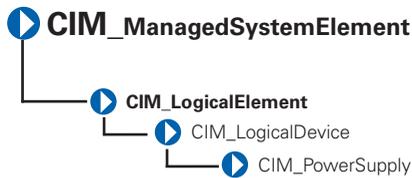
Table 3-19. CIM_Keyboard Properties

Class Name:	CIM_Keyboard	
Parent Class:	CIM_UserDevice	
Property	Description	Data Type
NumberOfFunctionKeys	Indicates the number of function keys on the keyboard.	uint16
Layout	A free-form string indicating the format and layout of the keyboard.	string

Table 3-19. CIM_Keyboard Properties (continued)

Class Name:	CIM_Keyboard	
Parent Class:	CIM_UserDevice	
Property	Description	Data Type
Password	An integer indicating if a hardware-level password is enabled at the keyboard, preventing local input. Values for the Password property are: 1 - Other 2 - Unknown 3 - Disabled 4 - Enabled 5 - Not implemented	uint16

CIM_PowerSupply



The CIM_PowerSupply class described in Table 3-20 contains devices that provide current and voltage for the operation of the system and its components.

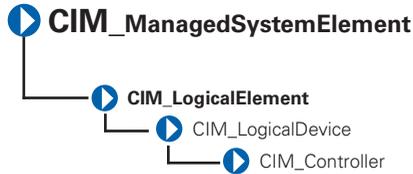
Table 3-20. CIM_PowerSupply Properties

Class Name:	CIM_PowerSupply	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
IsSwitchingSupply	Indicates that the power supply is a switching power supply and not a linear power supply.	Boolean

Table 3-20. CIM_PowerSupply Properties (continued)

Class Name:	CIM_PowerSupply	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
Range1InputVoltageLow	Indicates the low voltage in millivolts of input voltage range 1 for this power supply. A value of 0 denotes unknown.	uint32
Range1InputVoltageHigh	Indicates the high voltage in millivolts of input voltage range 1 for this power supply. A value of 0 denotes unknown.	uint32
ActiveInputVoltage	Indicates which input voltage range is currently in use. Range 1, range 2, or both can be specified using the values 3, 4, or 5, respectively. If the supply is not drawing power, a value of 6 (neither) can be specified. This information is necessary in the case of an uninterruptible power supply (UPS), a subclass of power supply. Values for the ActiveInputVoltage property are: 1 - Other 2 - Unknown 3 - Range 1 4 - Range 2 5 - Both range 1 and range 2 6 - Neither range 1 nor range 2	uint16
TotalOutputPower	Represents the total output power of the power supply in milliwatts. A value of 0 denotes that the power output is unknown.	uint32
PMCapable	Indicates the Power Monitoring capability.	Boolean

CIM_Controller

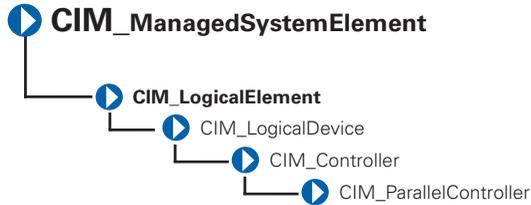


The `CIM_Controller` class described in Table 3-21 groups miscellaneous control-related devices. Examples of controllers are small computer system interface (SCSI) controllers, Universal Serial Bus (USB) controllers, and serial controllers.

Table 3-21. CIM_Controller Properties

Class Name:	<code>CIM_Controller</code>	
Parent Class:	<code>CIM_LogicalDevice</code>	
Property	Description	Data Type
<code>ProtocolSupported</code>	The protocol used by the controller to access controlled devices. Values for the ProtocolSupported property are: 1 - Other 2 - Unknown 3 - PCI 4 - Parallel protocol	<code>uint16</code>

CIM_ParallelController

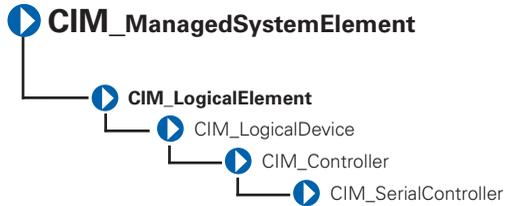


The `CIM_ParallelController` class described in Table 3-22 contains a set of objects that control parallel devices. Parallel controllers transfer 8 or 16 bits of data at a time to the devices they control, for example, a parallel port controlling a printer.

Table 3-22. CIM_ParallelController Properties

Class Name:	CIM_ParallelController	
Parent Class:	CIM_Controller	
Property	Description	Data Type
DMASupport	Set to TRUE if the parallel controller supports DMA.	Boolean
Security	An enumeration indicating the operational security for the controller. Values for the Security property are: 1 - Other 2 - Unknown 3 - None 4 - External interface locked out 5 - External interface enabled 6 - Boot bypass	uint16

CIM_SerialController

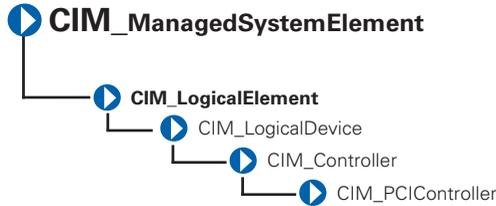


The `CIM_SerialController` class described in Table 3-23 contains controllers that transfer data one bit at a time to the devices they control, for example, a serial port controlling a modem.

Table 3-23. CIM_SerialController Properties

Class Name:	CIM_SerialController	
Parent Class:	CIM_Controller	
Property	Description	Data Type
MaxBaudRate	Indicates the maximum baud rate in bits per second supported by the serial controller.	uint32
Security	An enumeration indicating the operational security for the controller. Values for the Security property are: 1 - Other 2 - Unknown 3 - None 4 - External interface locked out 5 - External interface enabled 6 - Boot bypass	uint16

CIM_PCIController



The `CIM_PCIController` class described in Table 3-24 contains a set of devices that follow the Peripheral Component Interconnect (PCI) protocol defined by the Personal Computer Memory Card International Association (PCMCIA). The PCI protocol defines how data is transferred between devices. The `CIM_PCIController` class contains PCI adapters and bridges.

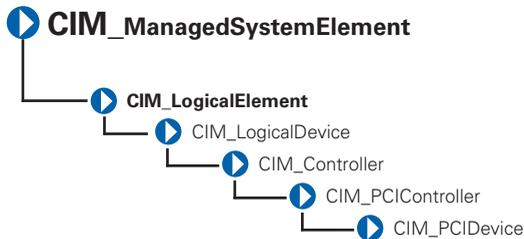
Table 3-24. CIM_PCIController Properties

Class Name:	<code>CIM_PCIController</code>	
Parent Class:	<code>CIM_Controller</code>	
Property	Description	Data Type
<code>CommandRegister</code>	The current contents of the register that provide basic control over the device’s ability to respond to, and/or perform PCI accesses. The data in the capabilities array is gathered from the PCI status register and the PCI capabilities list as defined in the PCI specification.	<code>uint16</code>

Table 3-24. CIM_PCIController Properties (continued)

Class Name:	CIM_PCIController	
Parent Class:	CIM_Controller	
Property	Description	Data Type
CommandRegister (continued)	Values for the CommandRegister property are: 0 - Unknown 1 - Other 2 - Supports 66 MHz 3 - Supports user-definable features 4 - Supports fast back-to-back transactions 5 - PCI-X capable 6 - PCI power management supported 7 - Message signaled interrupts supported 8 - Parity error recovery capable 9 - AGP supported 10 - Vital product data supported 11 - Provides slot identification 12 - Hot swap supported	

CIM_PCIDevice

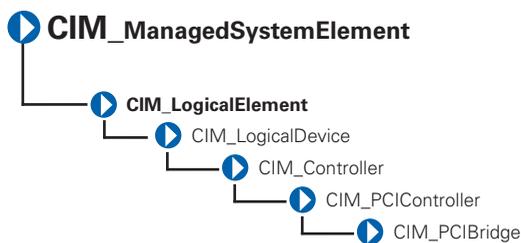


The CIM_PCIDevice class described in Table 3-25 describes the capabilities and management of a PCI device controller on an adapter card.

Table 3-25. CIM_PCIDevice Properties

Class Name:	CIM_PCIDevice	
Parent Class:	CIM_PCIController	
Property	Description	Data Type
BaseAddress	Identifies an array of up to six double-word base memory addresses.	uint32
SubsystemID	Identifies a subsystem identifier code.	uint16
SubsystemVendorID	Identifies a subsystem vendor ID. ID information is reported from a PCI device through protocol-specific requests. This information is also present in the CIM_PhysicalElement class (the manufacturer property) for hardware, and the CIM_Product class (the vendor property) for information related to product acquisition.	uint16
ExpansionROMBaseAddress	Identifies a double-word expansion ROM base memory address.	uint32

CIM_PCIBridge

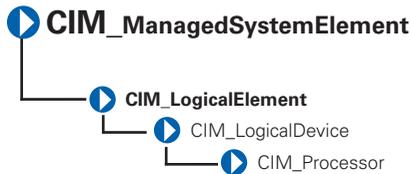


The CIM_PCIBridge class described in Table 3-26 describes the capabilities and management of a PCI controller providing bridge-to-bridge capability. An example is a PCI to Industry-Standard Architecture (ISA) bus bridge.

Table 3-26. CIM_PCIBridge Properties

Class Name:	CIM_PCIBridge	
Parent Class:	CIM_PCIController	
Property	Description	Data Type
BaseAddress	Identifies an array of double-word base memory addresses.	uint32
BridgeType	Indicates the type of bridge. A bridge is PCI to <value>, except for the Host, which is a host-to-PCI bridge. Values for the BridgeType property are as follows: 0 - Host 1 - ISA 128 - Other	uint16
BaseAddress	Identifies an array of double-word base memory addresses.	uint32

CIM_Processor



The `CIM_Processor` class described in Table 3-27 contains devices that interpret and execute commands, for example, the Intel Xeon microprocessor.

Table 3-27. CIM_Processor Properties

Class Name:	CIM_Processor	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
Role	A string describing the role of the microprocessor, for example, central microprocessor or math processor.	string
UpgradeMethod	<p>Provides microprocessor socket information including data on how this microprocessor can be upgraded (if upgrades are supported). This property is an integer enumeration. Values for the UpgradeMethod property are as follows:</p> <ul style="list-style-type: none"> 1 - Other 2 - Unknown 3 - Daughter board 4 - ZIF socket 5 - Replacement/piggy back 6 - None 7 - LIF socket 8 - Slot 1 9 - Slot 2 10 - 370-pin socket 19 - Socket mPGA604 20 - Socket LGA771 21 - Socket LGA775 22 - Socket S1 23 - Socket AM2 24- Socket F (1207) 25- Socket LGA1366 	uint16
MaxClockSpeed	Indicates the maximum speed (in MHz) of this microprocessor.	uint32
Core count	Indicates the number of core processors detected.	uint16
CoreEnabledCount	Indicates the number of core processors enabled.	uint16

Table 3-27. CIM_Processor Properties (continued)

Class Name:	CIM_Processor	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
CurrentClockSpeed	Indicates the current speed (in MHz) of this microprocessor.	uint32
DataWidth	Indicates the processor data width in bits.	uint16
AddressWidth	Indicates the processor address width in bits.	uint16
Stepping	Indicates the revision level of the processor within the microprocessor family.	string
UniqueID	Identifies a globally unique identifier for the microprocessor. This identifier may only be unique within a microprocessor family.	string
Brand	Indicates the brand name of the processor.	string
Model	Indicates the model name of the processor.	string
ExtendedCharacteristics	Indicates the extended capabilities of the processor. This attribute is a bit field. The following are the definitions of a bit when set to one: Bit 0 — Virtualization Technology (VT) supported Bit 1 — Demand-Based Switching (DBS) supported Bit 2 — eXecute Disable (XD) supported Bit 3 — Hyper Threading (HT) supported	uint16
ExtendedStates	Indicates the setting of the extended capabilities of the processor. This attribute is a bit field. The following are the definitions of a bit when set to one: Bit 0 — Virtualization Technology (VT) enabled Bit 1 — Demand-Based Switching (DBS) enabled Bit 2 — eXecute Disable (XD) enabled Bit 3 — Hyper Threading (HT) enabled	uint16
CPUStatus	Indicates the current status of the microprocessor. For example, it may be disabled by the user through	uint16

Table 3-27. CIM_Processor Properties (continued)

Class Name:	CIM_Processor	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
	<p>the BIOS or disabled due to a POST error. Values for the CPUStatus property are as follows:</p> <ul style="list-style-type: none"> 0 - Unknown 1 - Microprocessor enabled 2 - Microprocessor disabled by user through BIOS setup 3 - Microprocessor disabled by BIOS (POST error) 4 - Microprocessor is idle 5 - Other 	
Family	<p>Refers to the processor family type. Values for the Family property are as follows:</p> <ul style="list-style-type: none"> 1 - Other 2 - Unknown 3 - 8086 4 - 80286 5 - 80386 6 - 80486 7 - 8087 8 - 80287 9 - 80387 10 - 80487 11 - Pentium Brand 12 - Pentium Pro 13 - Pentium II 14 - Pentium processor with MMX technology 15 - Celeron 16 - Pentium II Xeon 17 - Pentium III 	uint16

Table 3-27. CIM_Processor Properties (continued)

Class Name:	CIM_Processor	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
Family (continued)	18 - M1 family	
	19 - M2 family	
	24 - AMD Duron Processor	
	25 - K5 family	
	26 - K6 family	
	27 - K6-2	
	28 - K6-3	
	29 - AMD Athlon Processor Family	
	30 - AMD29000 Family	
	31 - K6-2+	
	32 - Power PC Family	
	33 - Power PC 601	
	34 - Power PC 603	
	35 - Power PC 603+	
	36 - Power PC 604	
	37 - Power PC 620	
	38 - Power PC X704	
	39 - Power PC 750	
	40 - Intel Core Duo processor	
	41 - Intel Core Duo mobile processor	
42 - Intel Core Solo mobile processor		
43 - Intel Atom processor		
48 - Alpha Family		
49 - Alpha 21064		
50 - Alpha 21066		
51 - Alpha 21164		
52 - Alpha 21164PC		
53 - Alpha 21164a		

Table 3-27. CIM_Processor Properties (continued)

Class Name:	CIM_Processor	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
Family (continued)	54 - Alpha 21264	
	55 - Alpha 21364	
	60 - AMD Opteron 4100 Series Processor	
	64 - MIPS Family	
	65 - MIPS R4000	
	66 - MIPS R4200	
	67 - MIPS R4400	
	68 - MIPS R4600	
	69 - MIPS R10000	
	80 - SPARC Family	
	81 - SuperSPARC	
	82 - microSPARC II	
	83 - microSPARC IIep	
	84 - UltraSPARC	
	85 - UltraSPARC II	
	86 - UltraSPARC IIi	
	87 - UltraSPARC III	
	88 - UltraSPARC IIIi	
	96 - 68040	
	97 - 68xxx Family	
	98 - 68000	
	99 - 68010	
100 - 68020		
101 - 68030		
112 - Hobbit family		
120 - Crusoe 5000 Family		
121 - Crusoe 3000 Family		
122 - Efficeon 8000 Family		

Table 3-27. CIM_Processor Properties (continued)

Class Name:	CIM_Processor	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
Family (continued)	128 - Weitek	
	130 - Itanium Processor	
	131 - AMD Athlon 64 Processor Family	
	132 - AMD Opteron Processor Family	
	133 - AMD Sempron Processor Family	
	134 - AMD Turion 64 Mobile Technology	
	135 - Dual-Core AMD Opteron Processor family	
	136 - AMD Athlon 64 X2 Dual-Core Processor family	
	137 - AMD Turion 64 X2 Mobile Technology	
	138 - Quad-Core AMD Opteron Processor Family	
	139 - Third-Generation AMD Opteron Processor Family	
	140 - AMD Phenom FX Quad-Core Processor Family	
	141 - AMD Phenom X4 Quad-Core Processor Family	
	142 - AMD Phenom X2 Dual-Core Processor Family	
	143 - AMD Athlon X2 Dual-Core Processor Family	
	144 - PA-RISC family	
	145 - PA-RISC 8500	
	146 - PA-RISC 8000	
	147 - PA-RISC 7300LC	
	148 - PA-RISC 7200	
	149 - PA-RISC 7100LC	
	150 - PA-RISC 7100	
	160 - V30 family	
	161 - Quad-Core Intel Xeon processor 3200 Series	
	162 - Dual-Core Intel Xeon processor 3000 Series	
	163 - Quad-Core Intel Xeon processor 5300 Series	
	164 - Dual-Core Intel Xeon processor 5100 Series	
	165 - Dual-Core Intel Xeon processor 5000 Series	

Table 3-27. CIM_Processor Properties (continued)

Class Name:	CIM_Processor	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
Family (continued)	166 - Dual-Core Intel Xeon processor LV	
	167 - Dual-Core Intel Xeon processor ULV	
	168 - Dual-Core Intel Xeon processor 7100 Series	
	169 - Quad-Core Intel Xeon processor 5400 Series	
	170 - Quad-Core Intel Xeon processor	
	171- Dual-Core Intel Xeon processor 5200 Series	
	172- Dual-Core Intel Xeon processor 7200 Series	
	173- Quad-Core Intel Xeon processor 7300 Series	
	174- Quad-Core Intel Xeon processor 7400 Series	
	175- Multi-Core Intel Xeon processor 7400 Series	
	176 - Pentium III Xeon	
	177 - Pentium III Processor with Intel SpeedStep	
	178 - Technology	
	179 - Pentium 4	
	180 - Intel Xeon	
	181 - AS400 Family	
	182 - Intel Xeon Processor MP	
	183 - AMD Athlon XP family	
	184 - AMD Athlon MP family	
	185 - Intel Itanium 2	
186 - Intel Pentium M processor		
187 - Intel Celeron D Processor		
188 - Intel Pentium D Processor		
189 - Intel Pentium Extreme Edition processor		
190 - Intel Core 2 processor		
192 - Intel Core 2 Solo processor		
193 - Intel Core 2 Extreme processor		
194 - Intel Core 2 Quad processor		

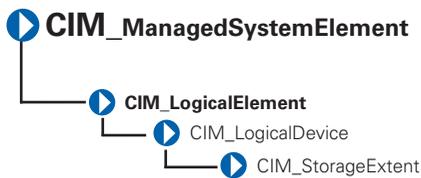
Table 3-27. CIM_Processor Properties (continued)

Class Name:	CIM_Processor	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
Family (continued)	195 - Intel Core 2 Extreme mobile processor	
	196 - Intel Core 2 Duo mobile processor	
	197 - Intel Core 2 Solo mobile processor	
	198 - Intel Core i7 Processor	
	199 - Dual-Core Intel Celeron Processor	
	200 - S/390 and zSeries family	
	201 - ESA/390 G4	
	202 - ESA/390 G5	
	203 - ESA/390 G6	
	204 - z/Architecture base	
	206 - CEh 206 Intel Core i3 processor	
	214 - Multi-Core Intel Xeon processor	
	215 - Dual-Core Intel Xeon processor 3xxx Series	
	216 - Quad-Core Intel Xeon processor 3xxx Series	
	217 - D9h 217 VIA Nano Processor Family	
	218 - Dual-Core Intel Xeon processor 5xxx Series	
	219 - Quad-Core Intel Xeon processor 5xxx Series	
	221 - Dual-Core Intel Xeon processor 7xxx Series	
	222 - Quad-Core Intel Xeon processor 7xxx Series	
	223 - Multi-Core Intel Xeon processor 7xxx Series	
	224 - E0h 224 Multi-Core Intel Xeon processor 3400 Series	
	230 - Embedded AMD Opteron Quad-Core Processor Family	
	231 - AMD Phenom Triple-Core Processor Family	
	232 - AMD Turion Ultra Dual-Core Mobile Processor Family	
	233 - AMD Turion Dual-Core Mobile Processor Family	
	234 - AMD Athlon Dual-Core Processor Family	
	235 - AMD Sempron SI Processor Family	

Table 3-27. CIM_Processor Properties (continued)

Class Name:	CIM_Processor	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
Family (continued)	238 - AMD Opteron Six-Core Processor Family	
	250 - i860	
	251 - i960	
	260 - SH-3	
	261 - SH-4	
	280 - ARM	
	281 - StrongARM	
	300 - 6x86	
	301 - MediaGX	
	302 - MII	
	320 - WinChip	
	350 - DSP	
	500 - Video processor	

CIM_StorageExtent

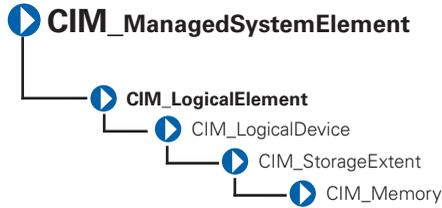


The CIM_StorageExtent class described in Table 3-28 contains devices that manage data storage, for example, hard drives or microprocessor memory.

Table 3-28. CIM_StorageExtent Properties

Class Name:	CIM_StorageExtent
Parent Class:	CIM_LogicalDevice

CIM_Memory

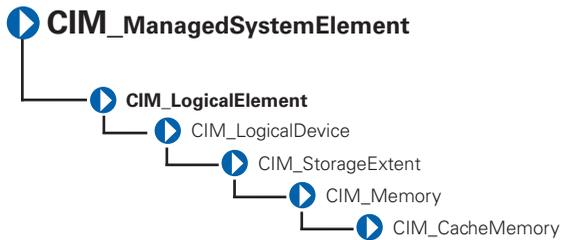


The CIM_Memory class described in Table 3-29 describes the capabilities and management of storage extent devices, for example, cache memory or system memory.

Table 3-29. CIM_Memory Properties

Class Name:	CIM_Memory
Parent Class:	CIM_StorageExtent

CIM_CacheMemory



The CIM_CacheMemory class described in Table 3-30 describes the capabilities and management of cache memory. Cache memory allows a microprocessor to access data and instructions faster than normal system memory.

Table 3-30. CIM_CacheMemory Properties

Class Name: CIM_CacheMemory		
Parent Class: CIM_Memory		
Property	Description	Data Type
Level	Defines if this is the primary, secondary, or tertiary cache. Values for the Level property are as follows: 1 - Other 2 - Unknown 3 - Primary 4 - Secondary 5 - Tertiary 6 - Not applicable	uint16
WritePolicy	Defines if this cache is a write-back or write-through cache or if this information varies with address or is defined individually for each input/output (I/O). Values for the WritePolicy property are as follows: 1 - Other 2 - Unknown 3 - Write-back 4 - Write-through 5 - Varies with address 6 - Determination per I/O	uint16
CacheType	Defines if this cache is for instruction caching, data caching, or both (unified). Values for the CacheType property are as follows: 1 - Other 2 - Unknown 3 - Instruction 4 - Data 5 - Unified	uint16
LineSize	Indicates the size, in bytes, of a single cache bucket or line.	uint32

Table 3-30. CIM_CacheMemory Properties (continued)

Class Name:	CIM_CacheMemory	
Parent Class:	CIM_Memory	
Property	Description	Data Type
ReadPolicy	Defines the policy used by the cache for handling read requests. Values for the ReadPolicy property are as follows: 1 - Other 2 - Unknown 3 - Read 4 - Read-ahead 5 - Read and read-ahead 6 - Determination per I/O	uint16

CIM_SoftwareElement



The `CIM_SoftwareElement` class described in Table 3-31 is used to define `CIM_SoftwareFeature`. The `CIM_SoftwareElement` class consists of individually manageable or deployable parts for a particular platform. A software element's platform is uniquely described by its underlying hardware architecture and operating system (for example, a system running Microsoft Windows Server 2003 on an Intel microprocessor). A software element's implementation on a particular platform depends on the platform's operating system.

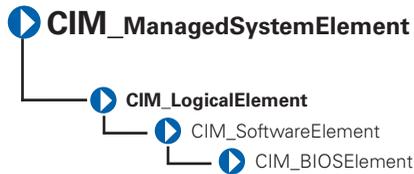
Table 3-31. CIM_SoftwareElement Properties

Class Name:	CIM_SoftwareElement	
Parent Class:	CIM_LogicalElement	
Property	Description	Data Type
Name	Indicates the name that identifies this software element.	string
Version	Provides the version in the form <major>.<minor>.<revision> or <major>.<minor><letter><revision>; for example, 1.2.3 or 1.2a3.	string
Manufacturer	See Table 1-1.	string
BuildNumber	Indicates the internal identifier for this build of the software element.	string
IdentificationCode	Provides the manufacturer's identifier for this software element. Often this is a stock keeping unit (SKU) or a part number.	string
SoftwareElementType	Indicates the type of software element. Values for SoftwareElementType are: 1 - Other 2 - Unknown 3 - BIOS 4 - ESM 5 - PSPB 6 - System backplane 7 - Hendrix (PV20x) kernel 8 - Hendrix (PV20x) application 9 - Front panel 10 - BMC 11 - Hot plug PCI 12 - SDR 13 - Peripheral bay backplane	uint16

Table 3-31. CIM_SoftwareElement Properties (continued)

Class Name:	CIM_SoftwareElement	
Parent Class:	CIM_LogicalElement	
Property	Description	Data Type
SoftwareElementType (continued)	14 - Slimfast secondary backplane 15 - Generic secondary backplane (ESM 3&4) 16 - RAC4 17 - iDRAC 18 - iDRAC6 19 Lifecycle controller 20 Unified Server Configurator 21- iDRAC7	uint16

CIM_BIOSElement



The CIM_BIOSElement class described in Table 3-32 describes the BIOS for the system. The BIOS controls the following:

- Communications between the microprocessor and peripheral devices, such as the keyboard and the video adapter.
- Miscellaneous functions, such as system messages.

Table 3-32. CIM_BIOSElement Properties

Class Name:	CIM_BIOSElement	
Parent Class:	CIM_SoftwareElement	
Property	Description	Data Type
Version	Provides the product version information.	string
Manufacturer	See Table 1-1	string
PrimaryBIOS	Specifies if it is a primary BIOS for the system. When the value = TRUE, the BIOS is the primary BIOS.	Boolean

CIM_SoftwareFeature



The `CIM_SoftwareFeature` class described in Table 3-33 defines a particular function or capability of a product or application system. This class is intended to be meaningful to a consumer, or user of a product, rather than to explain how the product is built or packaged. When a software feature can exist on multiple platforms or operating systems (for example, a client component of a three-tiered client/server application might run on Windows Server 2003), a software feature is a collection of all the software elements for these different platforms. The users of the model must be aware of this situation because typically they are interested in a sub-collection of the software elements required for a particular platform.

Table 3-33. CIM_SoftwareFeature Properties

Class Name:	CIM_SoftwareFeature	
Parent Class:	CIM_LogicalElement	
Property	Description	Data Type
IdentifyingNumber	Provides product identification such as a serial number of the software.	string
ProductName	Identifies the commonly used product name.	string
Vendor	Identifies the name of the product's supplier. Corresponds to the vendor property in the product object in the DMTF solution exchange standard.	string
Version	Identifies the product version information. Corresponds to the version property in the product object in the DMTF solution exchange standard.	string
Name	Defines the label by which the object is known to the users. This label is a user-defined name that uniquely identifies the element.	string

DELL_SoftwareFeature



The `DELL_SoftwareFeature` class described in Table 3-34 defines the universal resource locator (URL) of the systems management software and the language in which systems management information is displayed. Defining these properties enables users to manage a system using an Internet browser. You can access Server Administrator using the secure hypertext transfer protocol (https) and a preassigned port number of 1311, or you can specify a port number of your choice.

Table 3-34. DELL_SoftwareFeature Properties

Class Name:	DELL_SoftwareFeature	
Parent Class:	CIM_SoftwareFeature	
Property	Description	Data Type
OmsaURL	Defines the URL for Server Administrator.	string
Language	Sets the language for systems management information.	string
AgentVersion	Defines the version information of the local CIM agent (same as ISVC version.)	string

CIM_SystemResource

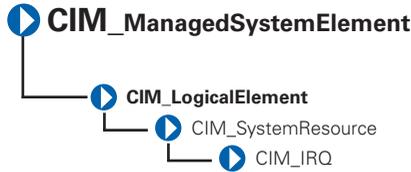


The `CIM_SystemResource` class described in Table 3-35 provides access to system resources from an operating system. System resources consist of interrupt requests (IRQs) and direct memory access (DMA) capabilities.

Table 3-35. CIM_SystemResource Properties

Class Name:	CIM_SystemResource
Parent Class:	CIM_LogicalElement

CIM_IRQ



The `CIM_IRQ` class described in Table 3-36 contains `IRQ` information. An `IRQ` is a signal that data is about to be sent to or received by a peripheral device. The signal travels by an `IRQ` line to the microprocessor. Each peripheral connection must be assigned an `IRQ` number. For example, the first serial port in the computer (COM1) is assigned to `IRQ4` by default.

Table 3-36. CIM_IRQ Properties

Class Name:	<code>CIM_IRQ</code>	
Parent Class:	<code>CIM_SystemResource</code>	
Property	Description	Data Type
<code>CSCreationClassName</code>	See Table 1-1.	string
<code>CSName</code>	See Table 1-1.	string
<code>CreationClassName</code>	See Table 1-1.	string
<code>IRQNumber</code>	Identifies the interrupt request number.	uint32
<code>Availability</code>	Indicates the availability of the <code>IRQ</code> . Values for the Availability property are as follows: 1 - Other 2 - Unknown 3 - Available 4 - In use/not available 5 - In use and available	uint16

Table 3-36. CIM_IRQ Properties (continued)

Class Name:	CIM_IRQ	
Parent Class:	CIM_SystemResource	
Property	Description	Data Type
TriggerLevel	Indicates if the interrupt is triggered by the hardware signal going high or low. Values for the TriggerLevel property are as follows: 1 - Other 2 - Unknown 3 - Active low 4 - Active high	uint16
TriggerType	Indicates if edge (value=4) or level triggered (value=3) interrupts occur. 1 - Other 2 - Unknown 3 - Level 4 - Edge	uint16
Shareable	Indicates if the IRQ can be shared. A value of TRUE indicates that the IRQ can be shared.	Boolean
Hardware	Indicates if the interrupt is hardware- or software-based. (A value of TRUE indicates that the interrupt is hardware based.) On a personal computer, a hardware IRQ is a physical wire to a programmable interrupt controller (PIC) chip set through which the microprocessor can be notified of time critical events. Some IRQ lines are reserved for standard devices such as the keyboard, diskette drive, and the system clock. A software interrupt is a programmatic mechanism to allow an application to get the attention of the processor.	Boolean

CIM_MemoryMappedIO

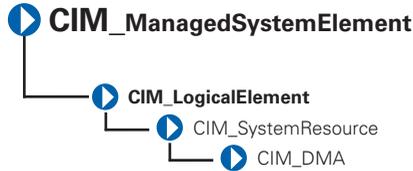


The `CIM_MemoryMappedIO` class described in Table 3-37 addresses both memory and port I/O resources for personal computer architecture memory mapped I/O.

Table 3-37. CIM_MemoryMappedIO Properties

Class Name:	CIM_MemoryMappedIO	
Parent Class:	CIM_SystemResource	
Property	Description	Data Type
CSCreationClassName	See Table 1-1.	string
CSName	See Table 1-1.	string
CreationClassName	See Table 1-1.	string
StartingAddress	Identifies the starting address of memory mapped I/O.	uint64
EndingAddress	Identifies the ending address of memory mapped I/O.	uint64
MappedResource	Indicates the type of memory mapped I/O. MappedResource defines if memory or I/O is mapped, and for I/O, if the mapping is to a memory or a port space. Memory mapped I/O values are as follows: 1 - Other 2 - Mapped memory 3 - I/O mapped to memory space 4 - I/O mapped to port space	uint16

CIM_DMA



The `CIM_DMA` class described in Table 3-38 contains DMA information. A DMA channel allows certain types of data transfer between RAM and a device to bypass the microprocessor.

Table 3-38. CIM_DMA Properties

Class Name:	<code>CIM_DMA</code>	
Parent Class:	<code>CIM_SystemResource</code>	
Property	Description	Data Type
<code>CSCreationClassName</code>	See Table 1-1.	string
<code>CSName</code>	See Table 1-1.	string
<code>CreationClassName</code>	See Table 1-1.	string
<code>DMACHannel</code>	Identifies a part of the object's key value, the DMA channel number.	uint32
<code>Availability</code>	Indicates the availability of the DMA. Values for the Availability property are as follows: 1 - Other 2 - Unknown 3 - Available 4 - In use/not available 5 - In use and available/shareable	uint16

CIM_RedundancyGroup



The `CIM_RedundancyGroup` class described in Table 3-39 is a set of components that provide more instances of a critical component than are required for the system’s operation. The extra components are used in case of critical component failure. For example, multiple power supplies allow a working power supply to take over when another power supply has failed.

Table 3-39. CIM_RedundancyGroup Properties

Class Name:	<code>CIM_RedundancyGroup</code>	
Parent Class:	<code>CIM_LogicalElement</code>	
Property	Description	Data Type
<code>CreationClassName</code>	See Table 1-1	string
<code>Name</code>	Serves as the key for the redundancy group’s instance in an enterprise environment.	string
<code>RedundancyStatus</code>	Provides information on the state of the redundancy group. Values for the RedundancyStatus property are as follows: 0 - Unknown 1 - Other 2 - Fully redundant. Fully redundant means that all of the configured redundancy is still available. 3 - Degraded redundancy. Degraded redundancy means that some failures have been experienced but some reduced amount of redundancy is still available. 4 - Redundancy lost. Redundancy lost means that a sufficient number of failures have occurred so that no redundancy is available and the next failure experienced causes overall failure.	uint16

CIM_ExtraCapacityGroup

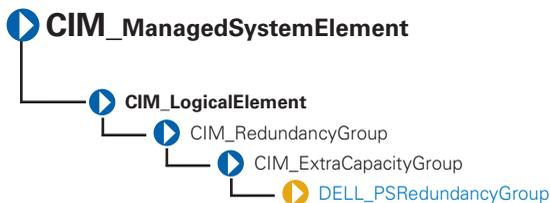


The CIM_ExtraCapacityGroup class described in Table 3-40 applies to systems that have more capability and components than are required for normal operation, for example, systems that have extra fans or power supplies.

Table 3-40. CIM_ExtraCapacityGroup Properties

Class Name:	CIM_ExtraCapacityGroup	
Parent Class:	CIM_RedundancyGroup	
Property	Description	Data Type
MinNumberNeeded	Specifies the smallest number of elements that must be operational in order to have redundancy. For example, in an N+1 redundancy relationship, the MinNumberNeeded property should be set to N.	uint32

DELL_PSRedundancyGroup

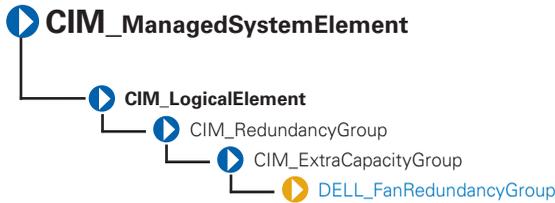


The DELL_PSRedundancyGroup described in Table 3-41 is a Dell-specific extension of the CIM_ExtraCapacityGroup class. The DELL_PSRedundancyGroup class defines what constitutes power supply redundancy in a system.

Table 3-41. DELL_PSRedundancyGroup Properties

Class Name:	DELL_PSRedundancyGroup
Parent Class:	CIM_ExtraCapacityGroup

DELL_FanRedundancyGroup



The DELL_FanRedundancyGroup described in Table 3-42 defines what constitutes fan redundancy in a system.

Table 3-42. DELL_FanRedundancyGroup Properties

Class Name:	DELL_FanRedundancyGroup
Parent Class:	CIM_ExtraCapacityGroup

CIM_EnabledLogicalElement



The CIM_EnabledLogicalElement class described in Table 3-43 extends the CIM_LogicalElement class to abstract the concept of an element that is enabled or disabled, such as a LogicalDevice or ServiceAccessPoint.

Table 3-43. CIM_EnabledLogicalElement Properties

Class Name:	CIM_EnabledLogicalElement
--------------------	---------------------------

Table 3-43. CIM_EnabledLogicalElement Properties (continued)

Parent Class: CIM_LogicalElement

CIM_ServiceAccessPoint



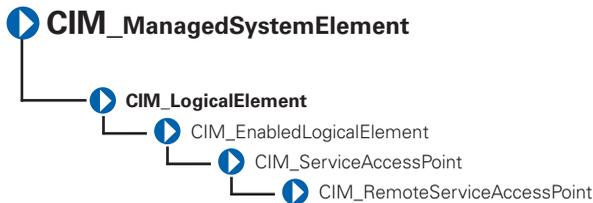
The `CIM_ServiceAccessPoint` class described in Table 3-44 represents the ability to utilize or invoke a service. Access points indicate that a service is available to other entities for use.

Table 3-44. CIM_ServiceAccessPoint Properties

Class Name: CIM_ServiceAccessPoint

Parent Class: CIM_EnabledLogicalElement

CIM_RemoteServiceAccessPoint



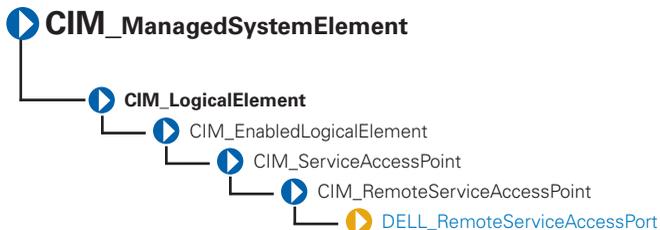
The `CIM_RemoteServiceAccessPoint` class described in Table 3-45 describes the accessing and addressing of information for a remote connection that is known to a *local* network element. This information is contained in the *local* network element since this is the context in which it is

remote. The relevance of the remote service access point and information on its use are described by subclassing or associating to the `CIM_RemoteServiceAccessPoint` class.

Table 3-45. CIM_RemoteServiceAccessPoint Properties

Class Name:	<code>CIM_RemoteServiceAccessPoint</code>	
Parent Class:	<code>CIM_ServiceAccessPoint</code>	
Property	Description	Data Type
AccessInfo	Describes accessing or addressing of information for a remote connection. This can be a host name, network address, and other similar information.	string
InfoFormat	Indicates an enumerated integer describing the format and interpretation of the AccessInfo property. This property can have the following values: 1 - Other 2 - Host name 3 - IPv4 address 4 - IPv6 address 5 - IPX address 6 - DECnet address 7 - SNA address 8 - Autonomous system number 9 - MPLS label 10..99 - DMTF reserved 100 - Dial string 101 - Ethernet address 102 - Token Ring address 103 - ATM address 104 - Frame relay address 105..199 - DMTF reserved 200 - URL 32768..65535 - Vendor specific	uint16

DELL_RemoteServiceAccessPort



The `DELL_RemoteServiceAccessPort` class described in Table 3-46 is an extended class of the `CIM_RemoteServiceAccessPoint` class. The `DELL_RemoteServiceAccessPort` class provides information about Dell implementation-specific attributes.

Table 3-46. DELL_RemoteServiceAccessPort Properties

Class Name:	<code>DELL_RemoteServiceAccessPort</code>	
Parent Class:	<code>CIM_RemoteServiceAccessPoint</code>	
Property	Description	Data Type
<code>PortName</code>	Displays the name of the service access port.	string
<code>VersionString</code>	Indicates the version of the access point service.	string
<code>RemoteAccessType</code>	Indicated the type of remote access service. This property can have the following values: 0 - BMC 8 - IMC 9 - CMC 10 - iDRAC6 11 - iDRAC6 for modular systems 13 - BMC 16 - iDRAC7 17 - iDRAC7 for modular systems	uint16

Dell-Defined Classes

The Dell-defined classes are defined and populated by Dell rather than by the Common Information Model (CIM). None of these classes have a parent class and are on the same level as `CIM_ManagedSystemElement`. For information on how the logs are formatted, see Table 2-5.

Figure 4-1. Dell_EsmLog



The `DELL_EsmLog` class described in Table 4-1 records failure threshold violations collected by Server Administrator's embedded server management (ESM) capabilities.

Table 4-1. DELL_EsmLog Properties

Class Name:	DELL_EsmLog	
Parent Class:	None	
Property	Description	Data Type
recordNumber	Provides an index to the ESM table.	uint32
logRecord	Provides the ESM message content.	string
eventTime	Indicates the time that the message is generated.	datetime
status	Indicates the severity of the event that caused the log to be generated.	string

DELL_PostLog



The `DELL_PostLog` class described in Table 4-2 is a record of the system’s power-on self-test (POST). When you turn on a system, the POST tests various system components, such as random-access memory (RAM), the hard drives, and the keyboard.

Table 4-2. DELL_PostLog Properties

Class Name:	<code>DELL_PostLog</code>
Parent Class:	None

DELL_CMAApplication

 **NOTE:** Dell-updateable components, such as BIOS and firmware, are considered applications.



The `DELL_CMApplication` class described in Table 4-3 contains information related to the Dell change management applications.

Table 4-3. DELL_CMApplication

Class Name:	<code>DELL_CMApplication</code>	
Parent Class:	None	
Property	Description	Data Type
<code>componentType</code>	Defines the application type.	string
<code>subComponentID</code>	Defines an application string.	string
<code>version</code>	Indicates the current version of the application.	string
<code>name</code>	Indicates the name of the application.	string
<code>deviceKey</code>	Indicates the device key of the application.	string

DELL_CMDevice



The `DELL_CMDevice` class described in Table 4-4 contains information related to the Dell change management device.

Table 4-4. DELL_CMDevice Properties

Class Name:	<code>DELL_CMDevice</code>	
Parent Class:	None	
Property	Description	Data Type
<code>componentID</code>	Defines a component string.	string
<code>name</code>	Indicates the name of the device.	string
<code>vendorID</code>	Defines an ID for vendor supplying the device.	string

Table 4-4. DELL_CMDevice Properties (continued)

Class Name:	DELL_CMDevice	
Parent Class:	None	
Property	Description	Data Type
subVendorID	Defines an ID for an additional vendor supplying the device.	string
deviceID	Indicates the ID of the device.	string
subDeviceID	Indicates the ID for additional device.	string
bus	Indicates the PCI bus number.	string
device	Indicates the PCI device number.	string
function	Indicates the PCI function number.	string

DELL_CMDeviceApplication



The DELL_CMDeviceApplication class described in Table 4-5 contains information related to the Dell change management association between the device and application.

Table 4-5. DELL_CMDeviceApplication Properties

Class Name:	DELL_CMDeviceApplication	
Parent Class:	None	
Property	Description	Data Type
antecedent	Refers to the device.	string
dependent	Refers to the application.	string

DELL_CMInventory



The DELL_CMInventory class described in Table 4-6 contains information related to the Dell Change Management inventory.

Table 4-6. DELL_CMInventory Properties

Class Name:	DELL_CMInventory	
Parent Class:	None	
Property	Description	Data Type
local	Indicates the locale of the system.	string
schemaVersion	Indicates the inventory schema implemented by the system.	string
systemID	Defines the system ID.	string

DELL_CMOS



The DELL_CMOS class described in Table 4-7 contains information related to the Dell change management operating system.

Table 4-7. DELL_CMOS Properties

Class Name:	DELL_CMOS	
Parent Class:	None	
Property	Description	Data Type
architecture	Indicates the architecture of the operating system.	string
vendor	Indicates the vendor of the operating system.	string
majorVersion	Indicates the major version of the operating system.	string
minorVersion	Indicates the minor version of the operating system.	string
spMajorVersion	Indicates the current service pack number for the operating system's major version.	string
spMinorVersion	Indicates the current service pack number for the operating system's minor version.	string

DELL_CMProductInfo



The `DELL_CMProductInfo` class described in Table 4-8 contains information related to the Dell change management product.

Table 4-8. DELL_CMProductInfo Properties

Class Name:	DELL_CMProductInfo	
Parent Class:	None	
Property	Description	Data Type
name	Indicates the name of the product.	string
description	Provides a short description of the product.	string
vendor	Indicates the name of the product manufacturer.	string
version	Indicates the current version number of the product.	string

DELL_BIOSExtensions

The `DELL_BIOSExtensions` class described in Table 4-9 contains information related to the specific extension of the data attributes on your system.

Table 4-9. DELL_BIOSExtensions Properties

Class Name:	DELL_BIOSExtensions	
Parent Class:	CIM_ManagedSystemElement	
Property	Description	Data Type
systemBIOSCharacteristics	Indicates the characteristics of BIOS on your system.	uint64
systemBIOSCharacteristicsExt1	Indicates the specific extension of the data attributes on your system.	uint8
systemBIOSCharacteristicsExt2	Indicates the specific extension of the data attributes on your system.	uint8

DELL_BIOSSettings

The `DELL_BIOSSettings` class described in Table 4-10 contains information related to setting parameters in the Dell System Management BIOS.

Table 4-10. DELL_BIOSSettings Properties

Class Name:	<code>DELL_BIOSSettings</code>	
Parent Class:	<code>CIM_ManagedSystemElement</code>	
Property	Description	Data Type
<code>DellInstanceID</code>	Defines the instance ID of this class.	<code>uint32</code>
<code>TrustedPlatformModule</code>	Enables or disables the Trusted Platform Module (TPM). Values for the TPM property are: 0 - Other 1 - Unsupported 2 - Off 3 - On with BIOS Management 4 - On without BIOS Measurement	<code>uint8</code>

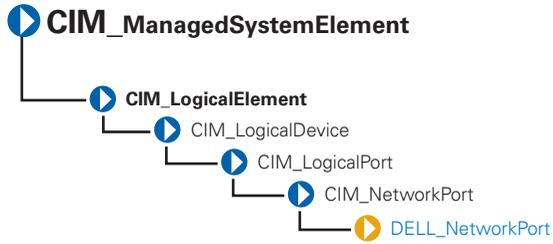
DELL_SDCardDevice

The `DELL_SDCard Devices` class described in Table 4-11 contains information related to the SD card devices.

Table 4-11. DELL_SDCardDevice Properties

Class Name:	DELL_SDCardDevice	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
sdType	An enumerated storage device type. The values for this property are: 1 - Other 2 - Unknown 3 - Hypervisor SD 4 - Virtual flash SD	uint8
sdCertified	Indicates the licensing information of the SD media. The values for this property are: 0 - Unknown 1 - Unlicensed 2 - Licensed	uint8
sdCardSizeMB	Indicates the size of the storage device in MB.	uint32
sdCardFreeSizeMB	Indicates the available size of the SD media in MB.	uint32
sdCardState	Indicates the value of the SD Card. The values for this property are: 0 - Present 1 and 2 - Reserved 3 - Offline detected 4 - Failed detected 5 - Active 6 - Bootable 7 - Write protected	

DELL_NetworkPort



The `Dell_NetworkPort` class described in Table 4-12 represents the Dell-specific features of the network adapters.

Table 4-12. Dell_NetworkPort Properties

Class Name:	DELL_NetworkPort	
Parent Class:	CIM_Network Port	
Property	Description	Data Type
NIC Capabilities	<p>NIC Capabilities bitmask indicates the capabilities of the NIC.</p> <p>The bitmask for the NIC Capability property are:</p> <p>Bit 0, Value 0 - Reporting NIC capabilities through this attribute is not supported.</p> <p>Bit 0, Value 1 - Reporting NIC capabilities through this attribute is supported.</p> <p>Bit 1, Value 0 - NIC is not TOE capable.</p> <p>Bit 1, Value 1 - NIC is TOE capable.</p> <p>Bit 2, Value 0 - NIC is not iSCSI capable.</p> <p>Bit 2, Value 1 - NIC is iSCSI capable.</p> <p>Bit 3, Value 0 - NIC is not FCoE capable.</p> <p>Bit 3, Value 1 - NIC is FCoE capable.</p>	uint 32

Table 4-12. Dell_NetworkPort Properties (continued)

Class Name:	DELL_NetworkPort	
Parent Class:	CIM_NetworkPort	
Property	Description	Data Type
NIC TOE Capability	<p>Defines the TOE capability of the NIC.</p> <p>Values for the NIC TOE Capability property are:</p> <ul style="list-style-type: none">0 - NIC/driver does not support querying for capability.1 - NIC/driver supports querying for capability but query returned an error.2 - NIC/driver supports querying for capability and querying indicates that it is capable.4 - NIC/driver supports querying for capability and querying indicates that it is not capable.8 - NIC/driver supports querying for capability but an error prevented querying the NIC/driver.16 - NIC/driver supports querying for capability but NIC/driver did not respond to query. <p>NOTE: Boolean value is defined if TOE is enabled (Boolean is TOEEnable).</p>	uint 32

Table 4-12. Dell_NetworkPort Properties (continued)

Class Name:	DELL_NetworkPort	
Parent Class:	CIM_NetworkPort	
Property	Description	Data Type
NIC RDMA Capability	<p>Defines the RDMA capability of the NIC.</p> <p>Values for the NIC RDMA Capability property are:</p> <ul style="list-style-type: none">0 - NIC/driver does not support querying for capability.1 - NIC/driver supports querying for capability but query returned an error.2 - NIC/driver supports querying for capability and querying indicates that it is capable.4 - NIC/driver supports querying for capability and querying indicates that it is not capable.8 - NIC/driver supports querying for capability but an error prevented querying the NIC/driver.16 - NIC/driver supports querying for capability but NIC/driver did not respond to query. <p>NOTE: Boolean value is defined if RDMA is enabled (Boolean is RDMAEnable).</p>	uint 32

Table 4-12. Dell_NetworkPort Properties (continued)

Class Name:	DELL_NetworkPort	
Parent Class:	CIM_NetworkPort	
Property	Description	Data Type
NIC iSCSI Capability	<p>Defines the iSCSI capability of the NIC.</p> <p>Values for the NIC iSCSI Capability property are:</p> <p>0 - NIC/driver does not support querying for capability.</p> <p>1 - NIC/driver supports querying for capability but query returned an error.</p> <p>2 - NIC/driver supports querying for capability and querying indicates that it is capable.</p> <p>4 - NIC/driver supports querying for capability and querying indicates that it is not capable.</p> <p>8 - NIC/driver supports querying for capability but an error prevented querying the NIC/driver.</p> <p>16 - NIC/driver supports querying for capability but NIC/driver did not respond to query.</p> <p>NOTE: Boolean value is defined if iSCSI is enabled (Boolean is iSCSIEnable).</p>	uint 32

Table 4-12. Dell_NetworkPort Properties (continued)

Class Name:	DELL_NetworkPort	
Parent Class:	CIM_NetworkPort	
Property	Description	Data Type
NIC Status	Indicates the status of the NIC or driver. The values for the NIC Status property are: 0 - Unknown 1 - Connected 2 - Disconnected 3 - Driver is bad 4 - Driver is disabled 10 - Hardware is initializing 12 - Hardware is closing 13 - Hardware is not ready	uint 32
BusNumber	Indicates the PCI bus number.	uint 8
DeviceNumber	Indicates the PCI device number.	uint 8
FunctionNumber	Indicates the PCI function number.	uint 8
DriverVersion	Indicates the NIC driver version.	string
IPAddress	Indicates the NIC IP address.	string
SubnetMask	Indicates the NIC subnet mask.	string
DHCP Server	Indicates the DHCP server.	string
DefaultGateway	Indicates the default gateway.	string
CurrentMacAddress	Indicates the NIC's current MAC address.	string
OSAdapterDescription	Describes the operating system adapter.	string
OSAdapterVendor	Describes the operating system vendor.	string

Table 4-12. DELL_NetworkPort Properties (continued)

Class Name:	DELL_NetworkPort	
Parent Class:	CIM_NetworkPort	
Property	Description	Data Type
OSProductName	Describes the product name of the operating system.	string
ServiceName	Indicates the service name.	string

DELL_PowerConsumptionAmpsSensor

The `DELL_PowerConsumptionAmpsSensor` class described in Table 4-13 contains information related to monitoring the power consumption.

Table 4-13. DELL_PowerConsumptionAmpsSensor

Class Name:	DELL_PowerConsumptionAmpsSensor	
Parent Class:	CIM_NumericSensor	
Property	Description	Data Type
UnitModifier	See Table 1-1.	sint32
CurrentReading	See Table 1-1.	sint32
IsLinear	See Table 1-1.	Boolean
LowerThresholdNonCritical	See Table 1-1.	sint32
UpperThresholdNonCritical	See Table 1-1.	sint32
LowerThresholdCritical	See Table 1-1.	sint32
UpperThresholdCritical	See Table 1-1.	sint32

DELL_PowerConsumptionWattsSensor

The DELL_PowerConsumptionWattsSensor class described in Table 4-14 contains information related to monitoring the power consumption.

Table 4-14. DELL_PowerConsumptionWattsSensor

Class Name:	DELL_PowerConsumptionWattsSensor	
Parent Class:	CIM_Numeric Sensor	
Property	Description	Data Type
UnitModifier	See Table 1-1.	sint32
CurrentReading	See Table 1-1.	sint32
IsLinear	See Table 1-1.	Boolean
LowerThresholdNonCritical	See Table 1-1.	sint32
UpperThresholdNonCritical	See Table 1-1.	sint32
LowerThresholdCritical	See Table 1-1.	sint32
UpperThresholdCritical	See Table 1-1.	sint32

DELL_PowerConsumptionData

The DELL_PowerConsumptionData class described in Table 4-15 contains information about the total power consumed from a start time and peak values registered during a time period.

Table 4-15. DELL_PowerConsumptionData

Class Name:	DELL_PowerConsumptionData	
Parent Class:	CIM_Logical Device	
Property	Description	Data Type
cumulative PowerReading	Indicates the total power consumed from a start time.	uint 32
peakAmpReading	Indicates the time from which the peak amperage reading is being monitored.	uint 16

Table 4-15. DELL_PowerConsumptionData (continued)

Class Name:	DELL_PowerConsumptionData	
Parent Class:	CIM_Logical Device	
peakWattReading	Indicates the time from which the peak watt reading is being monitored.	uint 16
ResetCounters	Function used to reset the peak readings.	uint 32
powerCapSetting	Indicates the user configured power setting.	uint 16
instHeadroom	Indicates the instantaneous headroom.	uint 32
peakHeadRoom	Function used to set the power budget.	uint 32

DCIM_OEM_DataAccessModule

The DCIM_OEM_DataAccessModule class is derived from the CIM_ManagedElement class. This class models hardware information in a proprietary format.



Table 4-16. DCIM_OEM_DataAccessModule Properties

Class Name:	DCIM_OEM_DataAccessModule	
Parent Class:	CIM_ManagedElement	
Property	Description	Data Type
InstanceID	Identifies the instance.	string

Table 4-16. DCIM_OEM_DataAccessModule Properties (continued)

Class Name: DCIM_OEM_DataAccessModule		
Parent Class: CIM_ManagedElement		
Property	Description	Data Type
GlobalStatus	Represents the global health status of the system. This property can have the following values: 0 - Other 1 - Unknown 2 - OK 3 - Warning/noncritical 4 - Critical 5 - Non-recoverable .. - Reserved NOTE: The GlobalStatus property is available only for Linux systems.	sint32
SendCmd	Function is used to invoke proprietary hardware management operation.	string
iDRACIPv4	Provides the remote access controller (iDRAC) IPv4 address.	string
iDRACIPv6	Provides the remote access controller (iDRAC) IPv6 address.	string

DCIM_RegisteredProfile

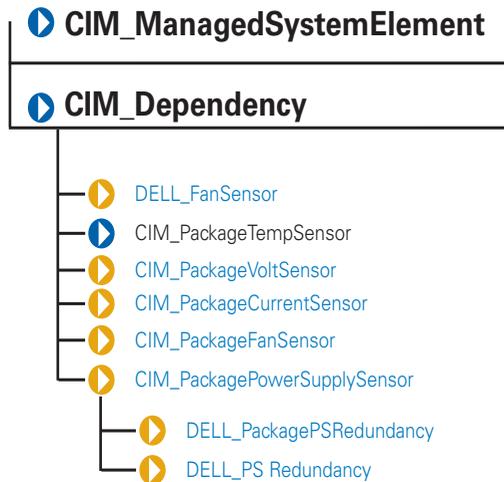


The `DCIM_RegisteredProfile` class is derived from the `CIM_RegisteredProfile` class. This class advertises the capabilities of `DCIM_OEM_DataAccessModule`.

CIM_Dependency

The `CIM_Dependency` class is an association used to establish dependency relationships between two managed system elements. The `CIM_Dependency` class described in Figure 5-1 does not have a parent class because it is a relationship or association between two elements.

Figure 5-1. CIM_Dependency Class Structure



Each class derived from the `CIM_Dependency` class has an element called an antecedent that represents the independent object in this association, and another element called a dependent that represents the object that is dependent on the antecedent. For example, consider two managed system elements: `Chassis1` and `PowerSupply3`. `Chassis1` is the antecedent element because a managed power supply would always be either contained in, or grouped with, a chassis.

DELL_FanSensor



The `DELL_FanSensor` class described in Table 5-1 defines a Dell-specific association between a fan and a sensor. The `CIM_PackageFanSensor` class contains fans that assist in cooling the entire package as opposed to a fan dedicated to cooling only some of the components in the package.

Table 5-1. DELL_FanSensor Properties

Class Name:	<code>DELL_FanSensor</code>
Parent Class:	<code>CIM_Dependency</code>
Element	Description
Antecedent	<code>CIM_Tachometer</code> refers to the tachometer (fan sensor) that measures the RPM of the fan.
Dependent	<code>CIM_Fan</code> refers to the fan whose revolutions are measured by the tachometer.

CIM_PackageTempSensor



The `CIM_PackageTempSensor` class described in Table 5-2 contains temperature sensors that are often installed in a package such as a chassis or a rack to assist in the monitoring of the package in general. This relationship is described by the `CIM_PackageTempSensor` association.

Table 5-2. CIM_PackageTempSensor Properties

Class Name:	CIM_PackageTempSensor
Parent Class:	CIM_Dependency
Element	Description
Antecedent	CIM_TempSensor refers to the temperature sensor for the package.
Dependent	CIM_PhysicalPackage refers to the physical package whose environment is being monitored.

CIM_PackageVoltSensor



The `CIM_PackageVoltSensor` class described in Table 5-3 contains voltage sensors that are often installed in a package such as a chassis or a rack to assist in the monitoring of the package in general. This relationship is described by the `CIM_PackageVoltSensor` association.

Table 5-3. CIM_PackageVoltage Properties

Class Name:	CIM_PackageVoltSensor
Parent Class:	CIM_Dependency
Element	Description
Antecedent	CIM_PackageVoltSensor refers to the voltage sensor for the package.
Dependent	CIM_PhysicalPackage refers to the physical package whose voltages are being monitored.

CIM_PackageCurrentSensor



The `CIM_PackageCurrentSensor` class described in Table 5-4 contains amperage sensors that are often installed in a package such as a chassis or a rack to assist in the monitoring of the package in general. This relationship is described by the `CIM_PackageCurrentSensor` association.

Table 5-4. CIM_PackageCurrentSensor Properties

Class Name:	<code>CIM_PackageCurrentSensor</code>
Parent Class:	<code>CIM_Dependency</code>
Element	Description
Antecedent	<code>CIM_CurrentSensor</code> refers to the amperage sensor for the package.
Dependent	<code>CIM_PhysicalPackage</code> refers to the physical package whose amperage is being monitored.

CIM_PackageFanSensor



The `CIM_PackageFanSensor` class described in Table 5-5 contains fan sensors that monitor the whole package.

Table 5-5. CIM_PackageFanSensor Properties

Class Name:	CIM_PackageFanSensor
Parent Class:	CIM_Dependency
Element	Description
Antecedent	CIM_Fan refers to the cooling device for the package.
Dependent	CIM_PhysicalPackage refers to the physical package whose environment is being monitored.

CIM_PackagePowerSupplySensor



The CIM_PackagePowerSupplySensor class described in Table 5-6 contains power supplies that provide power to the whole package.

Table 5-6. CIM_PackagePowerSupplySensor Properties

Class Name:	CIM_PackagePowerSupplySensor
Parent Class:	CIM_Dependency
Element	Description
Antecedent	CIM_PowerSupplySensor refers to the power supply sensor that monitors wattage for the entire package.
Dependent	CIM_PhysicalPackage refers to the package whose wattage is being monitored.

DELL_PackagePSRedundancy



The `DELL_PackagePSRedundancy` class described in Table 5-7 defines what constitutes a power supply redundancy for an entire package.

Table 5-7. DELL_PackagePSRedundancy Properties

Class Name:	<code>DELL_PackagePSRedundancy</code>
Parent Class:	<code>CIM_Dependency</code>
Element	Description
Antecedent	<code>DELL_PSRedundancyGroup</code> refers to power supplies that deliver wattage for the entire package.
Dependent	<code>CIM_PhysicalPackage</code> refers to the package to which the wattage is being supplied.

DELL_PSRedundancy



The `DELL_PSRedundancy` class described in Table 5-8 defines what constitutes a power supply redundancy for Dell systems.

Table 5-8. DELL_PSRedundancy Properties

Class Name:	DELL_PSRedundancy
Parent Class:	CIM_Dependency
Element	Description
Antecedent	CIM_PowerSupplySensor refers to the power supply sensor that monitors wattage for the entire package.
Dependent	CIM_PhysicalPackage refers to the package whose wattage is being monitored.

DELL_AssociatedSupplyPCamps

The DELL_AssociatedSupplyPCamps class described in Table 5-9 is a PowerConsumptionAmpsSensor associated with a CIM_PowerSupply which is defined by this class.

Table 5-9. DELL_AssociatedSupplyPCamps

Class Name:	DELL_AssociatedSupplyPCamps	
Parent Class:	CIM_Dependency	
Property	Description	Data Type
Antecedent	Indicates the PowerSupply instance.	uint 16
Dependent	Indicates the PowerConsumptionAmpsSensor associated with the CIM_PowerSupply.	uint 16

DELL_AssociatedSystemPCWatts

The DELL_AssociatedSystemPCWatts class described in Table 5-10 is a PowerConsumptionAmpsSensor associated with a Dell_System which is defined by this class.

Table 5-10. DELL_AssociatedSystemPCWatts

Class Name:	DELL_AssociatedSystemPCWatts	
Parent Class:	CIM_Dependency	
Property	Description	Data Type
Antecedent	Indicates the Dell_System instance.	uint 16
Dependent	Indicates the PowerConsumptionWattsSensor associated with the system.	uint 16

AssociatedSystemPCData

The AssociatedSystemPCData class described in Table 5-11 is a PowerConsumptionData associated with a Dell_System which is defined by this class.

Table 5-11. AssociatedSystemPCData

Class Name:	DELL_AssociatedSupplyPCAmps	
Parent Class:	CIM_Dependency	
Property	Description	Data Type
Antecedent	Indicates the Dell_System instance.	uint 16
Dependent	Indicates the PowerConsumptionData associated with the system.	uint 16

DELL_PowerProfileData

The DELL_PowerProfileData class described in Table 5-12 contains information related to power profiling and power knob data.

Table 5-12. DELL_PowerProfileData

Class Name:	DELL_PowerProfileData	
Parent Class:	CIM_LogicalDevice	
Property	Description	Data Type
chassisIndex	Indicates the chassis index for this power profile.	uint 8
supportedProfile	Indicates the supported profiles.	uint 16
profileSetting	Indicates the profile setting.	uint 16
customCPUCaps	Indicates the custom profile CPU management capability.	uint 16
customCPUSettings	Indicates the custom profile CPU management setting.	uint 16
customMemCaps	Indicates the custom profile memory management capability.	uint 16
customMemSettings	Indicates the custom profile memory management capability.	uint 16
customFanSettings	Indicates the custom profile fan management setting.	uint 16

Index

C

CIM classes and properties, 10
 base classes, 11
 classes that describe
 relationships, 12
 common properties of classes, 13
 conventions, 12
 parent classes, 12

CIM_Chip, 26

CIM_Dependency

 CIM_PackageCurrentSensor, 116

 CIM_PackageFanSensor, 116

 CIM_PackagePowerSupplySensor,
 117

 CIM_PackageTempSensor, 114

 CIM_PackageVoltSensor, 115

 DELL_FanSensor, 114

 DELL_PackagePSRedundancy, 1
 18

 DELL_PSRedundancy, 118

CIM_LogicalElement

 CIM_BIOSElement, 78

 CIM_CacheMemory, 76

 CIM_ComputerSystem, 40

 CIM_Controller, 60

 CIM_CurrentSensor, 49

 CIM_DiscreteSensor, 44

 CIM_DMA, 87

 CIM_ExtraCapacityGroup, 89

 CIM_Fan, 53

 CIM_FRU, 42

 CIM_IRQ, 84

 CIM_Keyboard, 56

 CIM_LogicalDevice, 41

 CIM_LogicalPort, 43

 CIM_MemoryMappedIO, 86

 CIM_NumericSensor, 45

 CIM_ParallelController, 61

 CIM_PCIBridge, 65

 CIM_PCIController, 63

 CIM_PointingDevice, 55

 CIM_PowerSupply, 57

 CIM_Processor, 66

 CIM_RedundancyGroup, 88

 CIM_Sensor, 42

 CIM_SerialController, 62

 CIM_SoftwareElement, 78

 CIM_SoftwareFeature, 81

 CIM_System, 39

 CIM_SystemResource, 83

 CIM_Tachometer, 51, 104

 CIM_TemperatureSensor, 48

 CIM_UserDevice, 54

 CIM_VoltageSensor, 50

 CIM_Watchdog, 104

 DELL_FanExtraCapacityGroup,
 90

 DELL_PSRedundancyGroup, 89

 DELL_System, 40

CIM_PhysicalComponent, 26

CIM_PhysicalElement

- CIM_PhysicalConnector, 30
- CIM_PhysicalMemory, 28
- CIM_PhysicalElement, 19
 - CIM_Chassis, 23
 - CIM_Chip, 26
 - CIM_PhysicalComponent, 26
 - CIM_PhysicalFrame, 22
 - CIM_PhysicalPackage, 21
 - CIM_Slot, 33
 - DELL_Chassis, 24
 - structure of, 19
- CIM_PhysicalElementClass
 - structure of, 19
- CIM_SoftwareElement, 78
 - class name, 16
 - common properties of classes, 13
 - current reading, 13

D

- data type, 16
- DCIM_OEM_DataAccessModule, 93
- DCIM_RegisteredProfile, 114
- Dell OpenManage Server Agent, 9
- DELL_CMApplication, 96
- DELL_CMDevice, 97
- DELL_CMDeviceApplication, 9
 - 8
- DELL_CMInventory, 99

- DELL_CMOS, 99
- DELL_CMProductInfo, 100
- DELL_PostLog, 96
- DELL_PSRedundancy, 118
 - description, 16

P

- parent class, 16
- property, 16

S

- Server Administrator 1.0, 9

V

- version, 15